



CITY OF BRADFORD.

ANNUAL REPORT

OF THE

MEDICAL OFFICER

1913

BRADFORD

WM. BYLES & SONS LIMITED, PRINTERS PICCADILLY.



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STATISTICAL SUMMARY.

Situation: Latitude 53'4 N.; Longitude 1'7 W.

Elevation: 251—1207 feet.

Area of City: 22,880 acres, or $35\frac{1}{2}$ sq. miles.

Density of Population: 12'7 persons per acre.

Number of Inhabited Houses: 72,008.

Population: 288,458 (Census 1911).

290,540 (estimated to the middle of 1913).

Birth-rate: 19'62 per 1000.

Death-rate: Recorded, 15'11 per 1000.

Standardised, 15'94 per 1000.

Zymotic, 1'10 per 1000.

Phthisis, 1'04 per 1000.

Infantile Mortality, 128 per 1000 births.

Total Rainfall: 28'09 inches.

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HEALTH COMMITTEE.

THE RIGHT HONOURABLE THE LORD MAYOR.

MR. COUNCILLOR E. J. SMITH, Chairman.

MR. COUNCILLOR H. T. PULLAN, Deputy Chairman.

MR. ALDERMAN HORSFALL,

MR. ALDERMAN A. PRIESTMAN,

„ R. JOHNSON,

„ G. H. ROBINSON,

„ A. PEEL,

„ H. M. TROTTER,

„ A. PICKLES,

„ W. WARBURTON,

MR. COUNCILLOR J. DRAKE,

MR. COUNCILLOR J. H. PALIN,

„ J. HARRISON,

„ L. J. PARKER,

„ O. HOLDEN,

„ E. PRIESTLEY,

„ S. KAY,

„ H. H. TETLEY,

„ J. MOSER,

„ D. WALKER,

and MR. COUNCILLOR H. WILMAN.

HEALTH SUB-COMMITTEES.

*Accounts Committee :—*

THE LORD MAYOR.

ALDERMEN—PEEL AND ROBINSON.

COUNCILLORS HARRISON, MOSER, PULLAN, SMITH, TETLEY,

D. WALKER, and WILMAN.

Housing Committee :—

THE LORD MAYOR

ALDERMEN—HORSFALL, JOHNSON, PEEL, PICKLES, PRIESTMAN,

ROBINSON, TROTTER, and WARBURTON.

COUNCILLORS DRAKE, HOLDEN, KAY, MOSER, PALIN, PARKER, PRIESTLEY,

PULLAN, SMITH, TETLEY, and D. WALKER.

Nuisances Committee :—

THE LORD MAYOR.

ALDERMEN HORSFALL, JOHNSON, PICKLES, PRIESTMAN, TROTTER,

and WARBURTON.

COUNCILLORS DRAKE, HARRISON, HOLDEN, KAY, PALIN, PARKER,

PRIESTLEY, PULLAN, and SMITH.

MEDICAL OFFICER'S DEPARTMENT,

TOWN HALL, BRADFORD,

1st July, 1914.

To the Chairman and Members of the Health Committee.

GENTLEMEN,

I have the honour to present to you the Annual Report of the Health of the City for the year 1913.

The Birth-rate for the year was 19·62 per 1,000 of the population, being an increase of 0·33 per 1,000 from that of 1912. The Birth-rate in Bradford is very low compared with that in other towns, although it has shown some tendency to rise during the last three years.

The Death-rate was 15·11 per 1,000, being an increase of 0·60 over that of the previous year. The Zymotic Death-rate was 1·10 per 1,000, an increase of 0·28, and the Infantile Mortality Rate was 128 per 1,000 children born, an increase of 30 per 1,000 above the rate of 1912. This was chiefly due to a severe epidemic of diarrhœa in the late Summer and Autumn. The Death-rate from pulmonary tuberculosis was 1·04, this rate being the lowest on record ; the rate in 1912 was 1·17 per 1,000.

Part of this report is also issued separately, and forms the annual report required by the Regulations of the Board of Education. There are other several important subjects specially dealt with, and attention

is directed to the parts referring to Tuberculosis, Infantile Mortality, and Housing.

It is pleasing to have to report the continued increase in the number of conversions of sanitary conveniences, referred to in Part XI. of the report.

It gives me great pleasure to report the excellent work done by all the members of the staff.

I have in conclusion to acknowledge with thanks the kindness and assistance which I have at all times received from the Chairman and Members of the Committee.

I am, Mr. Chairman and Gentlemen,

Your obedient servant,

JOHN J. BUCHAN,

Medical Officer of Health.

I.—VITAL STATISTICS.

(A) POPULATION.

The estimated population of the City at the middle of 1913 was 290,540. The population at the census of 1911 was 288,548, and that of 1901, 279,767.

The distribution and density of the population in the different wards of the City is seen in the following table:—

DISTRIBUTION AND DENSITY OF POPULATION.

Wards	Population, Census 1911	Estimated Population, 1913	Area of Wards in Acres	Person per Acre
Allerton	11,698	11,900	2864	4·2
Bolton	8,912	8,940	1001	8·9
Bradford Moor	23,037	23,650	680	34·8
East	16,629	16,520	385	42·9
East Bowling	17,771	17,810	565	31·5
Eccleshill	10,471	10,800	1221	8·8
Exchange	3,101	2,900	118	24·6
Great Horton	23,415	24,050	1289	18·7
Heaton	17,734	17,950	883	20·3
Idle	7,520	7,530	1693	4·5
Listerhills	16,142	15,850	321	49·4
Little Horton	16,389	16,630	425	39·1
Manningham	22,941	22,800	449	50·8
North	12,158	12,040	353	34·1
North Bierley East ..	12,013	12,100	2419	5·0
North Bierley West..	10,109	10,020	1836	5·5
South	14,366	14,310	303	47·2
Thornton	5,544	5,540	2251	2·5
Tong	7,365	7,380	2659	2·8
West	10,035	9,600	162	59·3
West Bowling	21,108	22,220	1003	22·1
City	288,458	290,540	22,880	12·7

The average density of population varies therefore from 2·5 persons per acre in Thornton Ward to 59·3 in the West Ward. The average density of population in such a city as Bradford where a large part of the land is not built upon does not properly express the crowding of the people on the land.

From the estimate of population in the wards of the City it will be seen that there is a decrease of population in the East, Exchange, Listerhills, Manningham, North, North Bierley West, South, and West Wards. Generally, therefore, the population in the older and central parts of the City is decreasing, while in the surrounding newer parts it is increasing.

The natural increase of population, or the excess in the number of births over that of deaths during the intercensal period 1901-11 was 15,831, but the actual increase recorded by the census of 1911 was only 8,691. This means that during the intercensal period there was a net emigration from the City of 7,140 persons. The age and sex distribution of the population is given in the Table on page 12. The following table shows the percentage at each age period in Bradford as compared with England and Wales generally.

PERCENTAGE POPULATION ACCORDING TO AGE AND SEX.

Age Periods	Bradford			England and Wales		
	Males	Females	Total	Males	Females	Total
Under 5 years	4.2	4.1	8.3	5.4	5.3	10.7
5—15 „	8.3	8.6	16.9	10.0	10.0	20.0
15—25 „	8.4	10.1	18.5	8.8	9.2	18.0
25—45 „	15.1	17.9	33.0	14.3	15.7	30.0
45—65 „	8.4	10.1	18.5	7.7	8.4	16.1
65 „	1.9	2.9	4.8	2.2	3.0	5.2
Totals	46.3	53.7	100.0	48.4	51.6	100.0

It would appear from this table that there is a comparative shortage of young lives in Bradford, as only 8.3 per cent of the population is under five years, and only 25.2 per cent. under fifteen years, as compared with 10.7 per cent. under five, and 30.7 under fifteen years in England and Wales generally.

In Bradford 46.3 per cent. of the population are males and 53.7 per cent. females, the corresponding figures in England and Wales are 48.4 per cent. males and 51.6 females. The excess of females in Bradford is therefore higher than in the country generally, and it is particularly marked at the age periods after fifteen.

At the census of 1911 there were 155,678 persons unmarried; the number of married persons at that time was 114,368, this being 39.6 per cent. of the total population, as compared with 36.4 per cent. in England and Wales.

POPULATION ARRANGED ACCORDING TO AGE AND SEX DISTRIBUTION.

	Males		Females	
Age Period	1911	1913	1911	1913
Under 1	2490	2508	2388	2405
1— 2	2325	2342	2297	2314
2— 3	2474	2495	2416	2433
3— 4	2508	2526	2339	2356
4— 5	2426	2443	2356	2373
5—10	11701	11785	12095	12182
10—15	12254	12342	12709	12801
15—25	24087	24261	29103	29313
25—35	23432	23601	28415	28620
35—45	20185	20331	23330	23498
45—55	14997	15105	17571	17698
55—65	9189	9255	11587	11670
65	5402	5441	8382	8442
All ages	133470	134435	154988	156105

The following statement shows the condition as to marriage in each sex per cent. of persons aged twenty years and upwards :—

	Males per cent.			Females per cent.		
	Unmarried	Married	Widowed	Unmarried	Married	Widowed
Bradford ..	27·3	66·8	5·9	31·7	55·4	12·9
England and Wales ..	30·7	63·3	6·0	30·2	57·9	11·9

It will therefore be seen that a larger percentage of males are married in Bradford than in England and Wales, but a smaller number of females ; there is however a larger proportion of widows in Bradford.

The number of inhabited houses in Bradford at the middle of 1913 is estimated at 72,008, which gives an inhabited house rate of 4·035 persons per house.

(B) BIRTHS.

The number of births registered in the 53 weeks ending January 3rd, 1914, was 5,811, of which 2978 were males and 2,833 females. This gives a birth rate for the year of 19·62 per 1,000, an increase of 0·27 per 1,000 from that recorded last year.

BIRTH RATE IN PREVIOUS YEARS.

	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford ..	21·3	20·8	20·1	20·9	19·1	19·0	19·0	19·2	19·6
96 Great Towns ..	28·2	27·9	27·0	27·0	25·7	25·0	25·6	24·9	25·1
England & Wales ..	27·2	27·0	26·3	26·5	25·6	24·8	24·4	23·8	23·9

The birth rate in Bradford is very low compared with that in most other towns; it has however in the last three years shown some tendency to rise. The fall in the Bradford birthrate is shown on the chart following page 24 and in Table A, page 24.

Locally the birth rate varied from 15·56 in Exchange ward to 24·13 in East Bowling.

The births in each ward in the four quarters of 1913 are seen on the table on the following page.

BIRTHS IN WARDS IN EACH QUARTER OF 1913.

Wards	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Total.
Allerton	43	47	68	43	201
Bolton	35	44	35	35	149
Bradford Moor ..	141	128	133	129	531
East	99	90	88	90	367
East Bowling ..	113	96	94	136	439
Eccleshill	56	47	59	45	207
Exchange	13	8	14	11	46
Great Horton ..	83	99	104	101	387
Heaton	61	84	74	67	286
Idle	28	40	34	35	137
Listerhills	84	80	90	63	317
Little Horton ..	104	118	100	86	408
Manningham	118	115	113	119	465
North	67	66	74	72	279
North Bierley East ..	46	60	56	48	210
North Bierley West..	53	43	48	40	184
South	86	89	79	92	346
Thornton	21	23	24	27	95
Tong	34	32	38	34	138
West	44	48	66	72	230
West Bowling ..	91	108	97	90	386
City	1420	1465	1488	1435	*5811

* Three of these births were born outside the district, the home address in Bradford not being obtainable.

Illegitimacy. Of the 5,811 births registered during 1913, 311 or 5·4 per cent. were illegitimate. This rate is above the average of recent years.

ILLEGITIMATE BIRTHS.

	1907	1908	1909	1910	1911	1912	1913
Number	249	289	278	300	260	293	311
Percentage to Total Births ..	4·3	4·8	5·0	5·5	4·7	5·2	5·4

(C) DEATHS.

The total number of deaths occurring in Bradford in 1913 was 4,372, but after adding those deaths of Bradford persons occurring outside the city and deducting those occurring in the city of persons resident outside, the number becomes 4,474. The death-rate corrected for public institutions is therefore 15·11.

DEATH RATE IN PREVIOUS YEARS.

	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	15·3	16·2	14·7	15·7	14·6	14·3	15·0	14·5	15·1
96 Great Towns	15·7	15·9	15·4	14·9	15·6	14·3	14·0	14·6	14·7
England & Wales	15·2	15·4	15·0	14·7	14·5	13·4	14·6	13·3	13·4

The death rate for 1913 is therefore 0·6 per 1,000 above that of the previous year. The death rates for the past thirty years is seen on Table A, page 24. The average death rate per 1,000 for five-yearly periods from 1870 shows that the rate has been falling continuously from 25·9 to about 15 per 1,000.

AVERAGE QUINQUENNIAL DEATH RATES FROM 1870.

1871-75 .. 25.9	1891-95 .. 19.7	1911 .. 15.0
1876-80 .. 22.3	1896-1900 17.9	1912 .. 14.5
1881-85 .. 19.9	1901-05 .. 16.3	1913 .. 15.1
1886-90 .. 20.9	1906-10 .. 15.1	

In making a comparison between death rates it is necessary to allow for differences in the age and sex distribution of the population. This is done by the application of a factor known as the "standardising factor" which corrects the death rate to the international standard of age and sex distribution—that of England and Wales at the census of 1901. The standardising factor is given for Bradford as 1.0550, so that the standardised death rate for Bradford in 1913 becomes 15.9 as compared with 13.1, the standardised death rate for England and Wales for the same year.

The deaths occurring in each Ward for each quarter of 1913 is seen on the Table on the following page. The birth and death rates and the natural increase per 1,000 living in each Ward is seen in the Table on page 19. It will be seen that the death rate has varied from 11.81 in the Heaton Ward, to 22.58 in the West Ward, and that the greatest natural increase of 9.53 per 1,000 has occurred in East Bowling Ward, while in Exchange Ward there has been a natural decrease of 3.72 per 1,000.

The death rate among the male population has been 16.4 and among the female population 14.0 per 1,000.

The death rate in Bradford compared with England and Wales is shown on the chart following, page 24.

DEATHS IN WARDS IN EACH QUARTER OF 1913.

Wards	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	1913
Allerton	32	35	26	38	131
Bolton	29	19	17	31	96
Bradford Moor ..	66	60	62	68	256
East	49	49	32	54	184
East Bowling ..	43	46	51	62	202
Eccleshill	37	28	22	23	110
Exchange	12	7	5	22	46
Great Horton ..	80	54	37	60	231
Heaton	42	34	35	53	164
Idle	21	22	23	18	84
Listerhills	53	52	53	56	214
Little Horton ..	40	45	51	45	181
Manningham	67	82	66	80	295
North	36	32	36	43	147
North Bierley East ..	44	40	36	50	170
North Bierley West..	34	32	37	33	136
South	41	43	41	55	180
Thornton	18	11	14	21	64
Tong	21	30	27	31	109
West	24	27	28	38	117
West Bowling ..	60	75	52	58	245
Public Institutions ..	288	240	298	286	1112
City	1137	1063	1049	1225	4474

NATURAL INCREASE OF POPULATION IN EACH WARD.

Wards.	Birth Rate per 1000	Death Rate, per 1000	Natural increase per 1000 living
Allerton	16.57	12.37	4.20
Bolton	16.35	12.40	3.95
Bradford Moor	22.03	13.19	8.84
East	22.00	14.37	7.63
East Bowling	24.13	14.60	9.53
Eccleshill	18.80	12.72	6.08
Exchange	15.56	19.28	—3.72
Great Horton	15.80	11.99	3.81
Heaton	15.63	11.81	3.82
Idle	17.85	12.51	5.34
Listerhills	19.62	19.25	0.37
Little Horton	24.08	15.47	8.61
Manningham	20.01	16.05	3.96
North	22.73	20.05	2.68
North Bierley East ..	17.03	15.32	1.71
North Bierley West ..	18.02	15.67	2.35
South	23.72	18.44	5.28
Thornton	16.82	12.75	4.07
Tong	18.35	17.68	0.67
West	23.51	22.58	0.93
West Bowling	17.04	13.73	3.31
City	19.62	15.11	4.51

Mortality at Different Ages. The following Table shows the total deaths in each age group during the past six years.

NUMBER OF DEATHS IN EACH YEAR AT DIFFERENT AGE PERIODS.

Ages	1908	1909	1910	1911	1912	1913
Under 1 year	854	638	695	765	553	741
1—2 years	240	147	208	161	136	152
2—5 „	169	138	158	153	119	105
5—15 „	138	126	124	145	146	133
15—25 „	203	175	165	185	180	163
25—45 „	608	557	525	630	599	584
45—65 „	1143	1182	1106	1150	1156	1253
over 65 „	1224	1247	1135	1162	1313	1343

It will be noted that the number of deaths has increased from that of last year in the age periods up to two years, and over forty-five years, and decreased in age periods from two years to forty-five years.

Infantile Mortality. There were 741 deaths of infants under one year of age which gives an infantile mortality rate of 128 per 1,000 births.

INFANTILE MORTALITY IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	167	144	152	124	143	116	127	140	99	128
Great Towns	160	140	155	127	128	118	115	140	101	117
England & Wales	146	128	133	118	121	109	106	130	95	109

A full discussion of infantile and child mortality will be found on pages 60—80 of this Report.

Mortality between one and sixty-five years. The number of deaths between these ages in 1913 was 2,390 which gives an annual death rate per 1,000 living at these ages of 8·6. The corresponding rates in the Great Towns and England and Wales were 8·2 and 7·5 per 1,000 living.

Mortality over sixty-five years. There were 1,343 deaths of persons aged sixty-five and upwards which gives an annual death-rate per 1,000 living of 98·1. The corresponding rates in the Great Towns and England and Wales for 1913 were 84·1 and 80·3 per 1,000 living.

Deaths in Public Institutions. In 1913, 1,112 deaths of Bradford residents occurred in Public Institutions, or 22·6 per cent. of the total deaths.

DEATHS IN PUBLIC INSTITUTIONS.

Name of Institution.	1912	1913
Bradford Union Hospital	511	525
North Bierley Union	50	65
Giggleswick Union	6	2
Other Poor Law Institutions	5	5
Menston Asylum	46	46
Wakefield Asylum	4	1
Storthes Hall Asylum	1	13
Scalebor Park Asylum	5	2
Other Asylums	4	5
Royal Infirmary	187	200
Children's Hospital	70	108
Eye and Ear Hospital	4	9
St. Catherine's Home	7	18
Leeds Infirmary	3	1
Leeds Road Hospital	76	97
Bierley Hall Hospital	2	1
Thornton Joint Hospital	2	—
North Bierley Joint Hospital	4	4
Calverley Joint Hospital	—	—
Eastby Sanatorium	1	—
Eldwick Sanatorium	—	1
Other Sanatoriums	2	—
Other Institutions	8	9
Total	1038	1112

It will be noted that in 1913, 597 deaths, or 13·3 per cent. of the total deaths occurred in Poor Law Hospitals ; 67 deaths or 1·5 per cent. in Lunatic Asylums ; 336 deaths, or 7·5 per cent., in Voluntary Hospitals ; and 102 deaths, or 2·3 per cent., in Municipal Hospitals.

The age incidence of deaths in Public Institutions is shown in the following Table :—

	Poor Law Hospitals	Lunatic Asylums	Voluntary Hospitals	Municipal Hospitals	Other Institutions	Total	Per cent. of Deaths at each age
Under 1	24	—	77	35	—	136	18·4
1—2	9	—	27	3	—	39	25·7
2—5	4	—	17	18	1	40	38·1
5—15	3	—	25	28	1	57	42·9
15—25	19	3	21	4	1	48	29·4
25—45	105	23	60	7	3	198	33·9
45—65	216	24	77	7	3	327	26·1
65	217	17	32	—	1	267	19·9
Total	597	67	336	102	10	1112	22·6

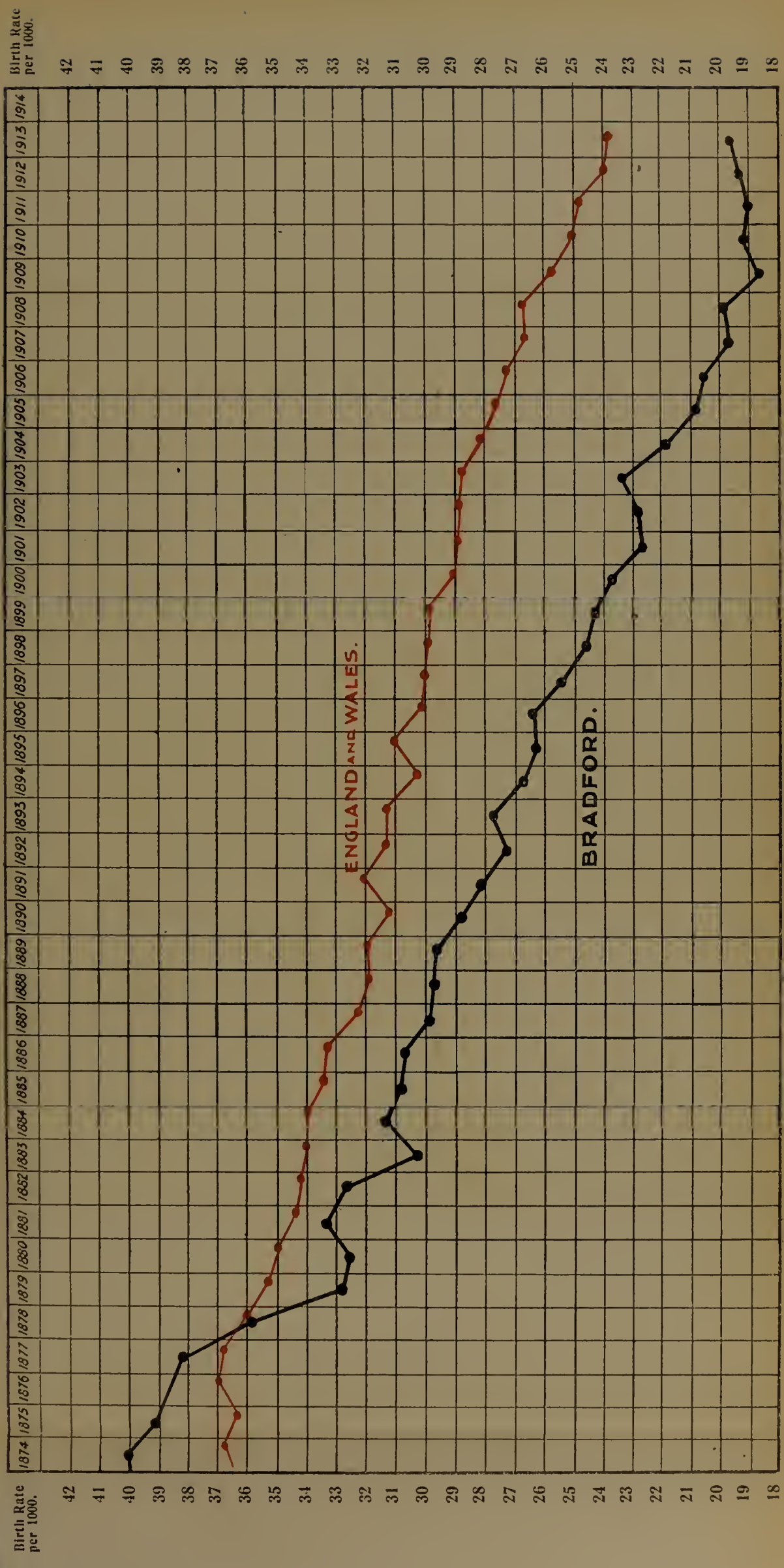
Certification of Deaths. 4.108 deaths, or 91·8 per cent., were certified by medical practitioners, and 363, or 8·1 per cent., by the coroner, and 3, or 0·1 per cent., were uncertified.

TABLE A.

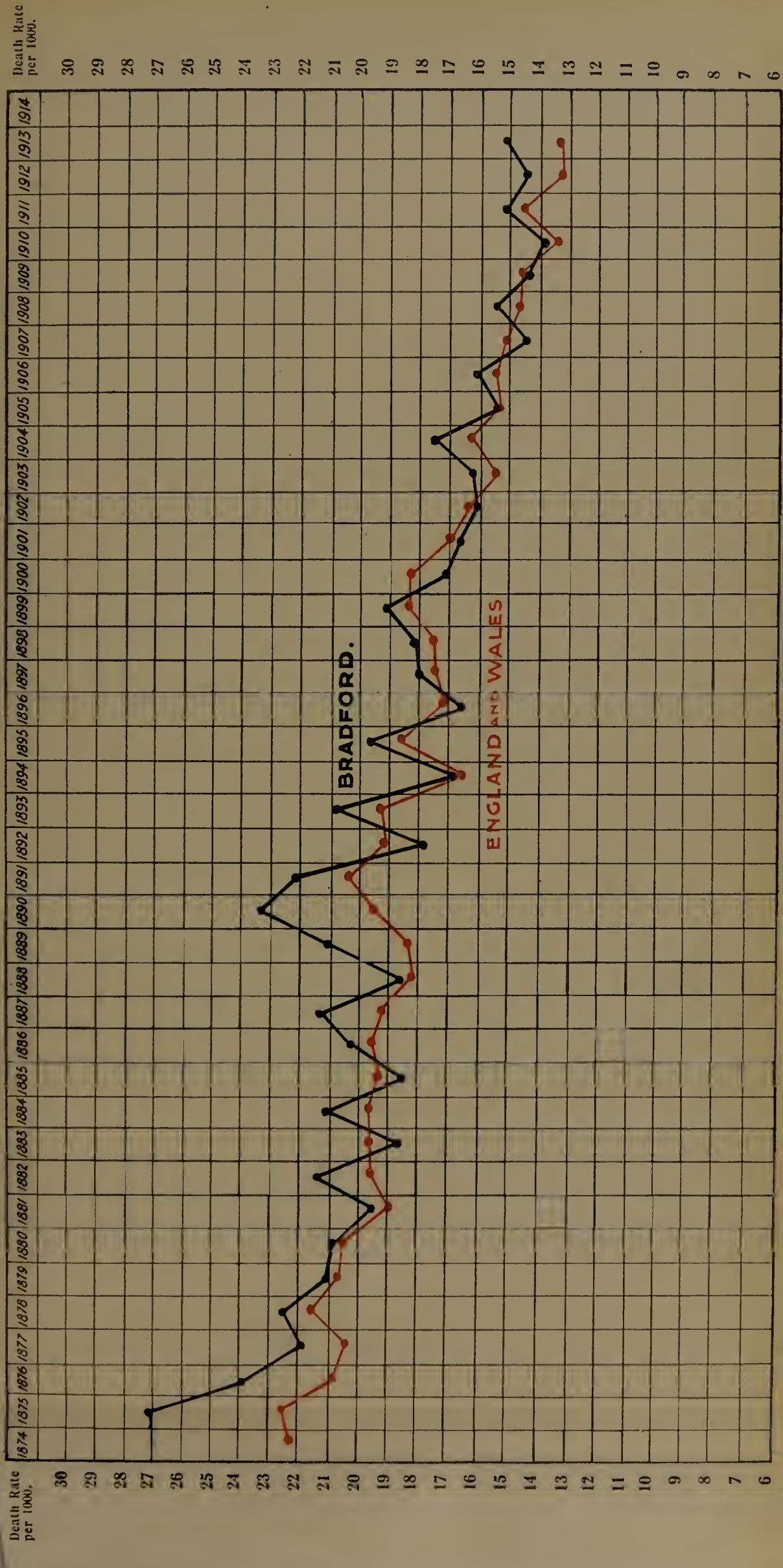
VITAL STATISTICS OF BRADFORD FROM 1884.

Year	Population	Birth Rate	Death Rate	Zymotic Death Rate	Infantile Mortality Rate
1884	201,347	30.9	20.0	2.40	181
1885	203,504	30.6	17.6	1.57	144
1886	205,684	30.6	19.1	2.24	167
1887	207,887	29.8	19.9	2.61	179
1888	210,113	29.8	17.2	1.59	153
1889	212,364	29.5	19.1	2.76	181
1890	214,634	29.1	20.1	2.38	169
1891	216,808	28.7	22.0	2.34	181
1892	217,805	27.4	18.0	1.59	155
1893	219,008	27.9	20.9	3.20	198
1894	220,218	27.1	17.0	1.69	144
1895	221,435	26.6	19.8	2.57	203
1896	222,658	26.7	16.8	1.59	143
1897	223,895	25.4	17.4	2.24	179
1898	225,133	24.8	17.5	2.20	184
1899	226,373	24.3	18.4	2.43	181
1900	278,634	24.1	17.1	1.43	141
1901	279,969	23.0	16.7	1.86	168
1902	280,833	23.3	15.7	1.38	138
1903	281,799	23.4	16.2	1.32	148
1904	282,568	22.2	17.4	2.43	167
1905	283,441	21.3	15.3	1.45	144
1906	284,314	20.9	16.2	1.97	152
1907	285,189	20.1	14.7	0.91	124
1908	286,071	21.0	15.7	1.46	143
1909	286,954	19.2	14.6	0.68	116
1910	287,839	19.1	14.3	1.26	127
1911	288,723	19.0	15.0	1.60	140
1912	289,618	19.3	14.5	0.82	98
1913	290,540	19.6	15.1	1.10	128

BIRTH RATE, 1874-1913.



DEATH RATE, 1874—1913.



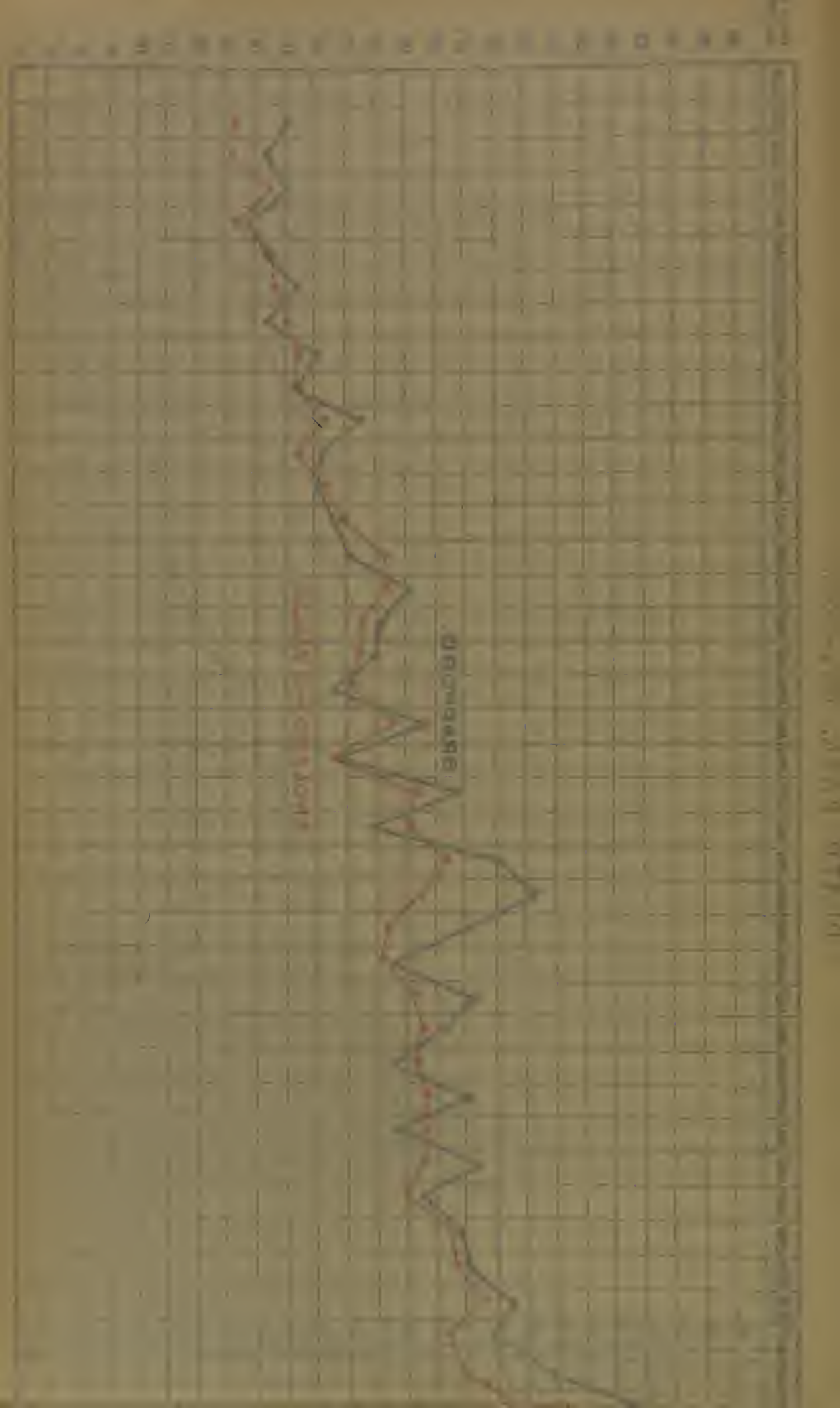


TABLE B.

COMPARATIVE STATISTICS OF GREAT TOWNS.

	Population	Birth Rate	Death Rate	Zymotic Rate	Infantile Mortality Rate
Birmingham ..	859,644	27·3	14·7	2·02	129
BRADFORD	290,540	19·6	15·1	1·10	128
Bristol ..	361,362	22·7	12·7	0·81	96
Halifax ..	100,740	18·7	15·4	0·74	101
Huddersfield ..	110,882	19·4	14·4	0·74	103
Hull	287,032	27·9	14·7	1·71	128
Leeds	457,295	23·5	15·4	1·40	134
Leicester ..	230,970	22·6	13·3	0·96	120
Liverpool ..	756,553	30·0	17·9	2·08	131
London ..	4,518,191	24·5	14·2	1·35	105
Manchester ..	730,976	25·9	15·5	1·70	127
Newcastle ..	271,295	27·0	15·0	1·26	121
Nottingham ..	264,735	22·6	14·1	1·21	130
Portsmouth ..	241,256	24·4	12·2	1·15	90
Salford ..	233,849	26·6	15·7	1·90	136
Sheffield ..	471,662	28·1	15·7	2·10	128
Stoke-on-Trent	239,284	31·3	18·6	3·13	170
West Ham ..	294,223	31·0	14·5	1·77	107

II.—RECORDS OF DISEASE.

(A) THE ZYMOTIC DISEASES.

The principal zymotic diseases at present recognised in this country are Enteric Fever, Diphtheria, Scarlet Fever, Smallpox, Typhus Fever, Infective Enteritis, Measles, and Whooping Cough.

The total deaths from these diseases in Bradford in 1913 was 326, giving a mortality rate for this group of 1·10 per 1,000. In England and Wales this rate was 1·19, and in the 96 Great Towns 1·48 per 1,000.

The Zymotic death rates during the past thirty years in Bradford are seen on Table A, page 24. It will be seen that the zymotic death rate for 1913 was 0·28 per 1,000 higher than the same death rate for 1912. The mean death rates from zymotic diseases for periods of five years show that though temporary fluctuations have occurred this death rate has been continuously falling.

AVERAGE QUINQUENNIAL ZYMOTIC DEATH RATES FROM 1870.

1871-75 .. 5·5	1891-95 .. 2·3	1911 .. 1·60
1876-80 .. 3·1	1896-1900.. 2·0	1912 .. 0·82
1881-85 .. 2·1	1901-05 .. 1·7	1913 .. 1·10
1886-90 .. 2·3	1906-10 .. 1·3	

The Zymotic death rate for the first quarter was 0·57 ; for the second 0·45 ; for the third 2·13 ; and for the fourth 1·24.

The diseases to be notified under the Infectious Disease (Notification) Act, 1889, are smallpox, cholera, diphtheria, membranous croup, erysipelas, scarlet fever, and the fevers known by any of the following names, typhus, typhoid, enteric, relapsing, continued or puerperal. In Bradford notification also applies to Acute Poliomyelitis and Cerebro-Spinal Fever, these diseases having been made notifiable on the 1st day of April, 1912.

The number of notifications received from medical practitioners during the year was 1302. This was 266 less than the number in the previous year.

NOTIFICATIONS FOR THE PAST 10 YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Scarlet Fever	1240	950	1047	633	815	1238	870	595	634	529
Typhoid Fever	193	187	236	110	148	81	110	196	256	81
Smallpox Continu'd Fever	100	105	2	—	—	—	—	—	2	—
Relapsing Fever	1	—	1	—	—	—	2	1	—	—
Cerebro-Spinal Fever	—	—	—	—	—	—	—	—	1	—
Puerperal Fever	—	—	—	2	2	1	—	—	2	—
Diphth'ra and Croup	19	23	12	20	18	18	16	26	16	15
Erysip'las	832	469	480	277	393	353	337	481	422	449
Poli'mye-litis ..	203	198	224	192	195	215	170	293	233	225
	—	—	—	—	—	—	—	—	2	3
Total	2588	1932	2002	1234	1571	1906	1505	1592	1568	1302

These numbers do not include the notifications of chickenpox required from time to time, nor notifications of tuberculosis.

Diphtheria. Cases, 449 ; Deaths, 53 ; Fatality, per cent., 11·78.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	832	469	480	277	397	357	337	481	422	449
Deaths	151	73	45	41	41	56	36	50	55	53
Fatality per cent.	18·1	15·6	9·4	14·8	10·3	15·7	10·7	10·4	13·0	11·8

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	0·53	0·32	0·16	0·14	0·14	0·19	0·12	0·18	0·19	0·18
England and Wales	0·17	0·16	0·17	0·16	0·15	0·14	0·12	0·13	0·11	0·12

The number of cases of Diphtheria in 1913 was slightly above that for 1912, but the fatality rate was somewhat lower. The sickness rate per 1,000 in Bradford was 1·54 as compared with 1·39 in England and Wales, and 1·48 in the County Boroughs of England. The greatest number of cases occurred in the West Bowling Ward, where 71 cases were notified, and in Great Horton where 54 cases occurred.

CASES OF DIPHTHERIA MONTH BY MONTH.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of Cases ..	37	36	31	33	50	30	51	28	43	35	28	47

The greatest incidence of the disease fell on children under ten years of age, and the disease was most fatal between three and four years of age.

CASES AND DEATHS ACCORDING TO AGE.

	Under 1 year	1—2	2—3	3—4	4—5	5—6	6—7	7—8	8—9	9—10	10—15	15—20	Over 20	Total
Cases ..	7	12	27	18	42	52	47	34	16	37	77	21	59	449
Deaths	4	4	2	8	6	12	6	5	2	—	3	—	1	51
Fatality per cent.	57·1	33·3	7·4	44·4	14·13	23·1	12·8	14·7	12·5	0·0	4·0	0·0	1·7	11·3

In 385 cases it was thought advisable to test the house drains where Diphtheria had occurred; the drains were found defective in 99 or 25·7 per cent. of the cases.

The number of cases removed to hospital was 306, or 68·2 per cent. of the cases.

Enteric Fever. Cases notified, 81; Deaths, 18; Fatality per cent, 22·2.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	193	187	236	110	148	81	110	196	256	81
Deaths	41	25	49	23	29	17	29	45	51	18
Fatality per cent.	21·2	13·4	20·8	20·9	19·6	21·0	26·4	22·9	19·9	22·2

MORTALITY RATES PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	0·14	0·09	0·17	0·08	0·10	0·06	0·10	0·14	0·18	0·06
England and Wales	0·09	0·09	0·09	0·07	0·07	0·06	0·05	0·07	0·04	0·04

There was a considerable decrease in the number of cases of Enteric Fever notified, and a slight increase in the fatality rate.

In the Wards the greatest number occurred in Little Horton (13 cases), Listerhills (10 cases), and West Bowling (9 cases), while no cases occurred in Allerton and Eccleshill Wards. The monthly incidence of the disease is shown as follows :—

CASES OF ENTERIC FEVER MONTH BY MONTH.

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of Cases ..	8	2	7	2	9	6	2	4	4	4	25	8

There was no excessive prevalence of the disease in 1913, although a late autumnal increase in the number of cases was observed.

Compared with other localities the sickness rate in Bradford was 0·27 per 1,000 of the population, as against 0·22 in England and Wales, and 0·25 in the County Boroughs of England.

The cases occurred in 68 houses as follows :—In 65 houses one case occurred, in 1 house two cases, in 1 house three cases, and in 1 house four cases, while seven cases occurred in public institutions.

The sanitary conveniences in the houses where cases occurred were privy middens in 28 houses, giving 31 cases ; and water closets in 40 houses, giving 43 cases ; the increased incidence in houses with privy middens will be noted. In 74 cases it was thought advisable to test the house drains ; defects were found in 13 or 17·6 per cent.

The number of cases removed to hospital was 52, 45 going to Leeds Road Hospital, 5 to North Bierley Hospital, and 2 to Thornton Hospital.

The bacteriological examinations carried out with respect to Enteric Fever are referred to in another part of the Report.

Scarlet Fever. Cases, 529 ; Deaths, 10 ; Fatality per cent., 1·89.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	1240	950	1047	633	815	1238	870	595	634	529
Deaths	33	44	41	13	14	24	14	9	12	10
Fatality per cent.	2·7	4·6	3·9	2·1	1·7	1·9	1·6	1·5	1·8	1·9

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	0·12	0·15	0·14	0·05	0·05	0·08	0·05	0·03	0·04	0·03
England and Wales	0·11	0·11	0·10	0·09	0·08	0·09	0·06	0·05	0·05	0·06

The number of cases of Scarlet Fever notified in 1913 is less than in any year since 1897. The sickness rate per 1,000 in Bradford in 1913 was 1·82, as compared with 3·57 in England and Wales, and 4·26 in the County Boroughs of England. The greatest number of cases occurred in Great Horton Ward, where 51 cases were notified, and in West Bowling Ward, where 49 cases were notified.

CASES OF SCARLET FEVER MONTH BY MONTH.

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of Cases ..	81	47	33	33	37	36	53	34	40	52	46	37

The cases and deaths classified according to age are seen in the following Table :—

CASES AND DEATHS ACCORDING TO AGE.

	Under 1 year	1-5 years	5-15 years	15-25 years	25-45 years	45-65 years	Over 65 years	Total
Cases	2	126	308	71	15	6	1	529
Deaths	—	1	3	5	—	1	—	10
Fatality per cent. ..	0·0	0·79	0·97	7·04	0·0	16·66	0·0	1·89

The number of cases removed to hospital was 409, or 77·3 per cent. of the cases.

Small Pox. Cases notified, 0 ; Deaths, 0 ;

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	100	105	2	—	—	—	—	—	2	—
Deaths	3	7	—	—	—	—	—	—	—	—
Fatality per cent.	3·0	6·7	0	—	—	—	—	—	0	—

No case of Small pox occurred in the City during 1913. The Health Committee have at present under consideration the urgent need for permanent provision for the isolation of this disease.

The following Table gives the vaccination returns in the Bradford Union since 1908. The figures have been supplied by Mr. Crowther, the Superintendent Vaccination Officer of the Bradford Union. The increase in the number of persons unprotected by vaccination is to be noted with regret.

VACCINATION STATISTICS.

Year	1 Births	2 Vaccinated	3 Insus- ceptible	4 Dead	5 Con. Objector	6 Post- poned	7 Removed	8 Un- accounted	Percent- age not Vaccinat'd including Columns 5, 6, 7, 8
1908	4773	2777	5	512	1029	68	333	49	34·8
1909	4544	2501	20	383	1245	53	305	37	39·6
1910	4508	2391	5	409	1317	73	270	43	41·6
1911	4573	2216	11	447	1526	82	239	52	46·1
1912	4702	2081	3	355	1826	120	230	87	52·1

The figures for that part of Bradford included in the North Bierley Union, are not available.

Diarrhœa. Deaths, 220 ; Mortality per 1,000, 0.74.

The diseases included in this category fall generally into two groups those which are zymotic in type and those not so regarded. The distinction between the two is by no means so well recognised, while the confusing character of the nomenclature used in certification adds to the difficulties which present themselves in a consideration of this subject.

There was a large increase in the number of deaths from these diseases last year as compared with the year 1912.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Deaths	284	177	328	112	246	61	142	249	57	220
Mort'lity per 1000	1.01	0.62	1.15	0.39	0.86	0.21	0.49	0.86	0.20	0.74

These diseases were most prevalent in the South, Listerhills, Manningham, Bradford Moor, North, East Bowling, Little Horton, East, and West Wards. Generally speaking therefore the highest mortality from *Diarrhœa* has occurred in the Wards with the greatest density of population.

The deaths from *Diarrhœa* were more prevalent in those districts where the sanitary conveniences were of the privy midden type.

The great majority of the deaths occurred in children under two years of age ; 187, or 85 per cent. of the deaths occurring at this age period.

DEATHS AT VARIOUS AGE PERIODS.

Age Periods	Months			Years.							
	0-3	3-6	6-12	0-1	1-2	2-5	5-15	15-25	25-45	45-65	65
Deaths ..	46	56	52	154	33	2	—	2	6	9	14

The disease assumed epidemic forms in the months of August, September, and October ; the number of deaths rising from two in the 27th week of the year (week ending July 5th), to 28 in the 39th week (week ending September 27th).

DEATHS OCCURRING MONTH BY MONTH.

	Jan.	Feb.	Mar.	Apl.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Number of Deaths ..	4	1	1	2	5	5	10	34	103	37	13	5	220

Seventy-nine per cent. of the deaths took place in the months of August, September, and October.

Week Ending.		Deaths from D'rrhoea	Mean Tempera- ture.	Week Ending.		Deaths from D'rrhoea	Mean Tempera- ture.
January	4 ..	—	42·7	July	5 ..	2	58·9
„	11 ..	2	41·3	„	12 ..	2	54·1
„	18 ..	—	33·7	„	19 ..	1	59·4
„	25 ..	2	37·6	„	26 ..	5	55·2
February	1 ..	1	35·5	August	2 ..	8	59·8
„	8 ..	—	44·0	„	9 ..	5	55·8
„	15 ..	—	40·7	„	16 ..	10	57·7
„	22 ..	—	35·8	„	23 ..	11	57·0
March	1 ..	1	39·0	„	30 ..	18	59·9
„	8 ..	—	44·1	September	6 ..	21	55·7
„	15 ..	—	41·8	„	13 ..	18	56·4
„	22 ..	—	38·9	„	20 ..	18	54·5
„	29 ..	—	40·4	„	27 ..	28	58·7
April	5 ..	1	43·9	October	4 ..	10	56·2
„	12 ..	—	41·3	„	11 ..	12	49·2
„	19 ..	1	43·5	„	18 ..	12	50·7
„	26 ..	—	?	„	25 ..	3	47·0
May	3 ..	2	48·6	November	1 ..	4	50·1
„	10 ..	1	48·2	„	8 ..	2	44·4
„	17 ..	1	50·4	„	15 ..	2	45·4
„	24 ..	1	?	„	22 ..	3	45·1
„	31 ..	4	58·2	„	29 ..	2	45·7
June	7 ..	—	55·9	December	6 ..	—	40·9
„	14 ..	—	52·3	„	13 ..	1	44·3
„	21 ..	—	58·8	„	20 ..	2	42·9
„	28 ..	1	56·4	„	27 ..	2	39·6
				January	3 ..	—	32·9

The Autumnal epidemic of Diarrhœa was therefore a very large one, and was characterised by the late date at which it reached its acme. This is to be associated with the prolonged dry and hot period which occurred in the late Summer and Autumn of 1913. So numerous and severe were the cases of diarrhœa, especially among young children, that it was deemed advisable to render available hospital treatment for the disease. A small pavilion was rapidly equipped at Leeds Road Hospital, at which there were treated 139 cases ; of these 39 died.

The Local Authority determined during the year to make zymotic enteritis notifiable under the Infectious Disease (Notification) Act, 1889.

DEATHS IN EACH WARD FROM DIARRHOEAL DISEASES IN 1913.

Ward	Certified as Infective			Not Certified as Infective			Total Deaths from Diarrhoeal Diseases		
	Under 2 yrs.	Others	Total	Under 2 yrs.	Others	Total	Under 2 yrs.	Others	Total
Allerton	2	—	2	2	—	2	4	—	4
Bolton	—	—	—	2	1	3	2	1	3
Bradford Moor	6	—	6	11	1	12	17	1	18
East	3	—	3	9	1	10	12	1	13
East Bowling	6	1	7	7	2	9	13	3	16
Eccleshill	—	—	—	2	2	4	2	2	4
Exchange	—	—	—	2	1	3	2	1	3
Great Horton	3	—	3	3	2	5	6	2	8
Heaton	1	—	1	4	3	7	5	3	8
Idle	1	—	1	1	—	1	2	—	2
Listerhills	10	1	11	7	3	10	17	4	21
Little Horton	10	—	10	4	2	6	14	2	16
Manningham	13	—	13	8	—	8	21	—	21
North	4	—	4	12	2	14	16	2	18
North Bierley East	2	—	2	—	5	5	2	5	7
North Bierley West	—	—	—	—	—	—	—	—	—
South	15	—	15	13	2	15	28	2	30
Thornton	—	—	—	2	2	4	2	2	4
Tong	—	—	—	3	—	3	3	—	3
West	6	—	6	6	1	7	12	1	13
West Bowling	3	—	3	4	1	5	7	1	8
City	85	2	87	102	31	133	187	33	220

Measles. Deaths, 36 ; Mortality per 1,000, 0·12.

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford England and Wales	0·53	0·04	0·44	0·17	0·25	0·08	0·49	0·04	0·17	0·12
	0·35	0·32	0·27	0·36	0·22	0·35	0·23	0·36	0·35	0·28

The City was very free from Measles for the greater part of the year, but in the third quarter an outbreak began which attained considerable dimensions during the current year.

Whooping Cough. Deaths, 22 ; Mortality per 1,000, 0·08.

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford England and Wales	0·19	0·36	0·13	0·28	0·19	0·15	0·16	0·35	0·04	0·08
	0·34	0·25	0·23	0·29	0·27	0·20	0·24	0·21	0·23	0·14

There was a slight increase in the mortality rate from Whooping Cough last year, 22 deaths occurring as compared with 13 in the year previous.

Influenza. Deaths, 43.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Deaths	36	51	32	64	72	87	33	35	22	43

The number of deaths from Influenza was rather over the average recorded in recent years.

Puerperal Fever. Cases, 15 ; Deaths, 6 ; Fatality per cent., 40·0.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	19	23	12	20	18	18	16	26	16	15
Deaths	8	10	9	10	9	2	7	8	9	6
Fatality per cent.	42·1	43·5	75·0	50·0	50·0	11·1	43·7	30·8	56·2	40·0
Number of live births to each death	785	605	660	574	666	2753	784	686	621	968

The term Puerperal Fever has been removed from the nomenclature of the Royal College of Physicians. Pyæmia, Septicæmia, or Septic Intoxication occurring in puerperal women should be described as Puerperal Pyæmia, Puerperal Septicæmia, or Puerperal Septic Intoxication.

Erysipelas. Cases, 225 ; Deaths, 9 ; Fatality per cent, 4·0.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	303	198	224	192	195	215	170	293	233	225
Deaths	9	7	9	5	5	10	7	14	6	9
Fatality per cent.	4·43	3·54	4·02	2·60	2·56	4·65	4·12	4·78	2·58	4·00

Anthrax. Cases, * 13; Deaths, * 2; Fatality per cent. 15'4.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Cases ..	5	20	11	9	8	7	5	7	8	13
Deaths	1	10	4	3	3	1	1	4	3	2
Fatality per cent.	20'0	50'0	36'4	33'3	37'5	14'3	20'0	57'1	37'5	15'4

* Included in these figures is a fatal case admitted to the Bradford Royal Infirmary of a person belonging to a district outside the city.

(B) OTHER DISEASES.

The deaths occurring in the City during 1913 from all diseases are set out on Table III., page 163, which also shows their age periods. This section will only deal with those diseases other than zymotic diseases which call for special comment.

Tuberculosis. Deaths, 425; Mortality rate per 1,000, 1'44.

There was a decrease of 38 in the number of deaths and a decrease of 0'16 per 1,000 in the mortality rate from tuberculosis as compared with 1912.

(A). PULMONARY TUBERCULOSIS. Deaths, 309; Mortality rate per 1,000, 1'04.

The figures show a decrease in the number of deaths of 55 and a decrease in the mortality rate of 0'22 per 1,000 in 1913.

(B). TUBERCULOSIS OTHER THAN PULMONARY. Deaths, 116 ; Mortality rate per 1,000, 0·40.

From these diseases the number of deaths show an increase of 17 and the mortality rate an increase of 0·06 per 1,000 in 1913.

A full consideration of the subject of Tuberculosis will be found on pages 43—59 of the Report.

Cancer and Malignant Disease. Deaths, 349 ; Mortality rate per 1,000, 1·18.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Deaths	267	254	284	285	286	326	292	338	356	349
Mortality rate per 1000 ..	0·93	0·90	1·00	1·00	1·00	1·14	1·01	1·17	1·23	1·18

The mortality rate is below that of last year, which was the highest on record.

AGE INCIDENCE AT DEATH.

Age Periods ..	1-15	15-25	25-45	45-65	65 and upwards
Deaths ..	2	2	49	188	108

The great majority (84·6 per cent.) of the deaths therefore occurred after 45 years of age.

DEATHS FROM CANCER CLASSIFIED ACCORDING TO THE ORGAN AFFECTED.

	1912.			1913.		
	Males.	Females.	Total.	Males.	Females.	Total.
Cancer of Stomach and Bowels ..	71	67	138	66	68	134
„ Liver	16	31	47	16	27	43
„ Urinary and Generative Organs	11	56	67	14	43	57
„ Breast	—	27	27	—	40	40
„ Head and Face	8	4	12	7	4	11
„ Throat and Tongue ..	20	5	25	20	6	26
„ Other parts of the body	24	16	40	20	18	38
Total	150	206	356	143	206	349

Respiratory Diseases. Deaths, 699 ; Mortality rate per 1,000, 2·36.

There was a slight decrease in the number of these deaths last year. The number of deaths from bronchitis has increased, and that from pneumonia has decreased.

DEATHS FROM BRONCHITIS AND PNEUMONIA IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bronchitis	434	431	350	425	403	428	333	322	359	410
Pneumonia	388	366	340	336	299	341	270	309	307	264

AGE INCIDENCE OF DEATHS.

Age Periods	1 year	1-2	2-5	5-15	15-25	25-45	45-65	65 upwards
Bronchitis ..	27	6	2	—	4	18	125	228
Pneumonia ..	69	30	13	5	10	27	54	56

The heavy mortality rate from these diseases in the young and old will be appreciated from the above table.

Deaths from Violence. Deaths, 143 ; Mortality rate per 1,000, 0·48.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Deaths	137	148	147	140	150	143	122	136	143	143
Mortality rate per 1,000 ..	·49	·52	·52	·49	·52	·50	·42	·47	·49	·48

During the year the coroner made inquiries into 363 cases of death.

III. PREVALENCE OF AND CONTROL OF TUBERCULOSIS.

(a) STATISTICS OF MORBIDITY AND MORTALITY.

The number of deaths from all forms of tuberculosis in 1913 was 425, giving a mortality rate of 1·44 per 1,000.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	07	1908	1909	1910	1911	1912	1913
Deaths	537	442	492	465	536	429	435	426	463	425

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	1.90	1.56	1.73	1.63	1.87	1.50	1.51	1.48	1.60	1.44
England and Wales..	1.78	1.64	1.65	1.62	1.59	1.54	1.43	1.47	1.38	

There was therefore a slight decrease in the mortality from this cause in 1913. During the past thirty years there has been a marked progressive reduction in the death rate from all forms of tuberculosis in Bradford ; this is well seen in the following table, which shows the average mortality rate per 1,000 for five yearly periods from 1881 :—

AVERAGE MORTALITY RATE PER 1,000 FROM TUBERCULOSIS IN
BRADFORD FOR PERIODS OF FIVE YEARS FROM 1881.

Periods ..	1881-85	1886-90	1891-95	1896-1900	1901-05	1906-10
Average Mortality rate per 1,000 ..	2.71	2.47	2.26	2.12	1.84	1.65

1911 .. 1.48	} Average for 3 years .. 1.50
1912 .. 1.60	
1913 .. 1.44	

For purposes of comparison of the results in Bradford with those of England and Wales it is necessary to apply to the Bradford figures standardising factors so as to eliminate differences in age and sex distribution. These factors for Bradford are as follows :—

STANDARDISING FACTORS FOR TUBERCULOSIS AT CENSUS, 1911.

Pulmonary Tuberculosis.—

Males	0.8920
Females	0.9178
Persons	0.9098

Other Forms of Tuberculosis.

Males	..	..	..	..	1·1650
Females	..	..	..	..	1·2354
Persons	..	..	..	..	1·2030

All Forms of Tuberculosis.

Males	..	..	..	..	0·9568
Females	..	..	..	..	1·0016
Persons	..	..	..	..	·9829

The general standardised mortality rate for tuberculosis therefore in 1913 was 1·4154 per 1,000.

Notification of all forms of Tuberculosis became compulsory from the 1st February, 1913, under a general order of the Local Government Board. Table V., page 166, shows the total number of notifications received during the last eleven months of the year. The total cases notified amounted to 1,369, of which 1,231 were notified for the first time; in addition also 407 notifications of admission to, or, discharge from public institutions were received.

(A) *Pulmonary Tuberculosis.* Deaths, 309; Mortality rate per 1,000, 1·04.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Deaths	392	321	374	330	395	319	329	332	364	309

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	1·38	1·13	1·32	1·16	1·38	1·11	1·14	1·15	1·25	1·04
England and Wales..	1·24	1·14	1·15	1·14	1·11	1·08	1·01	1·06	1·05	—

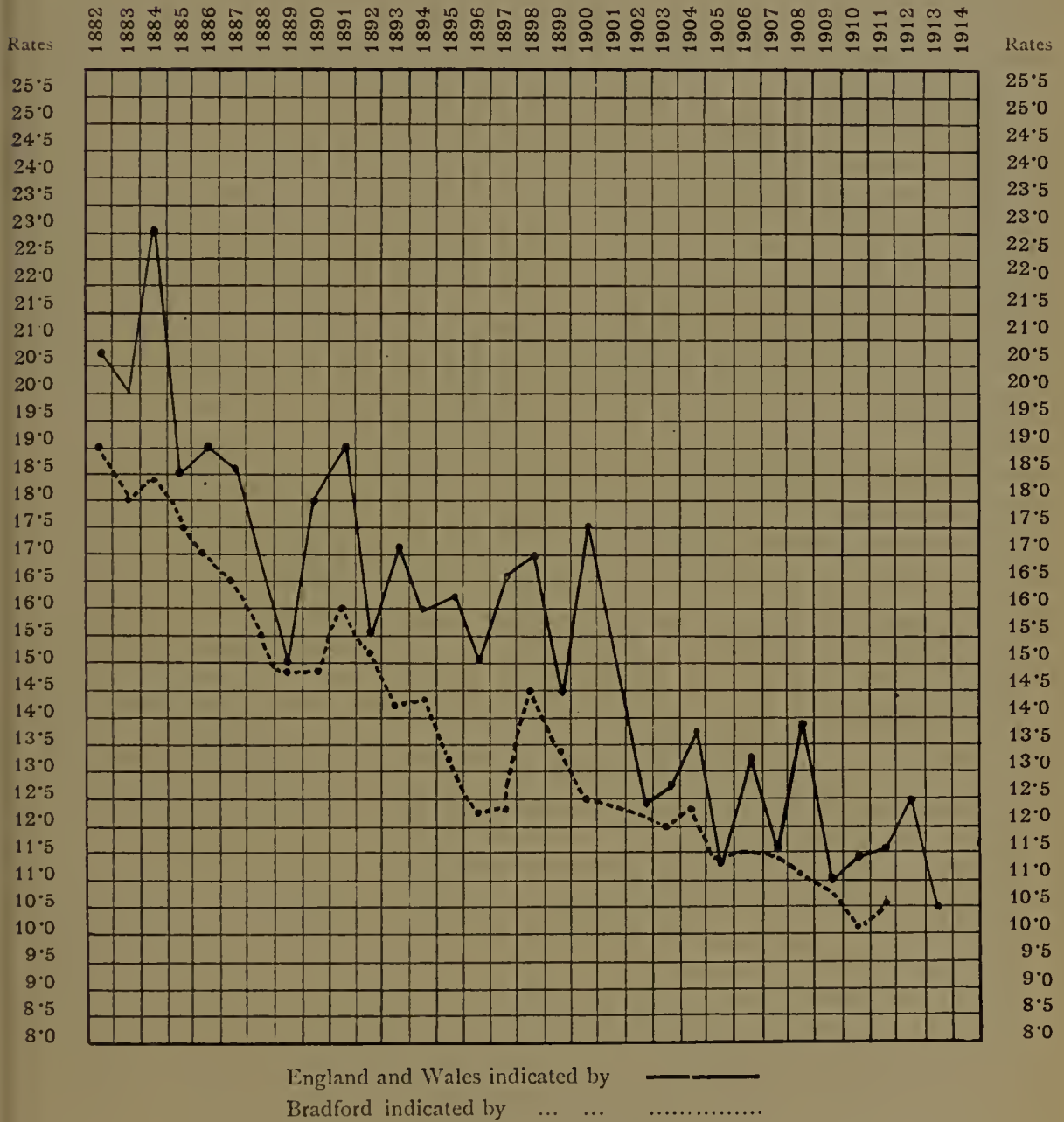
There was a considerable decrease in the number of deaths and in the mortality rate from pulmonary tuberculosis last year and the death rate is the lowest on record.

From the chart it will be noticed that there has been a continuous fall in the mortality from pulmonary tuberculosis for the past thirty years, and that during the latter half of this period this fall has been most marked.

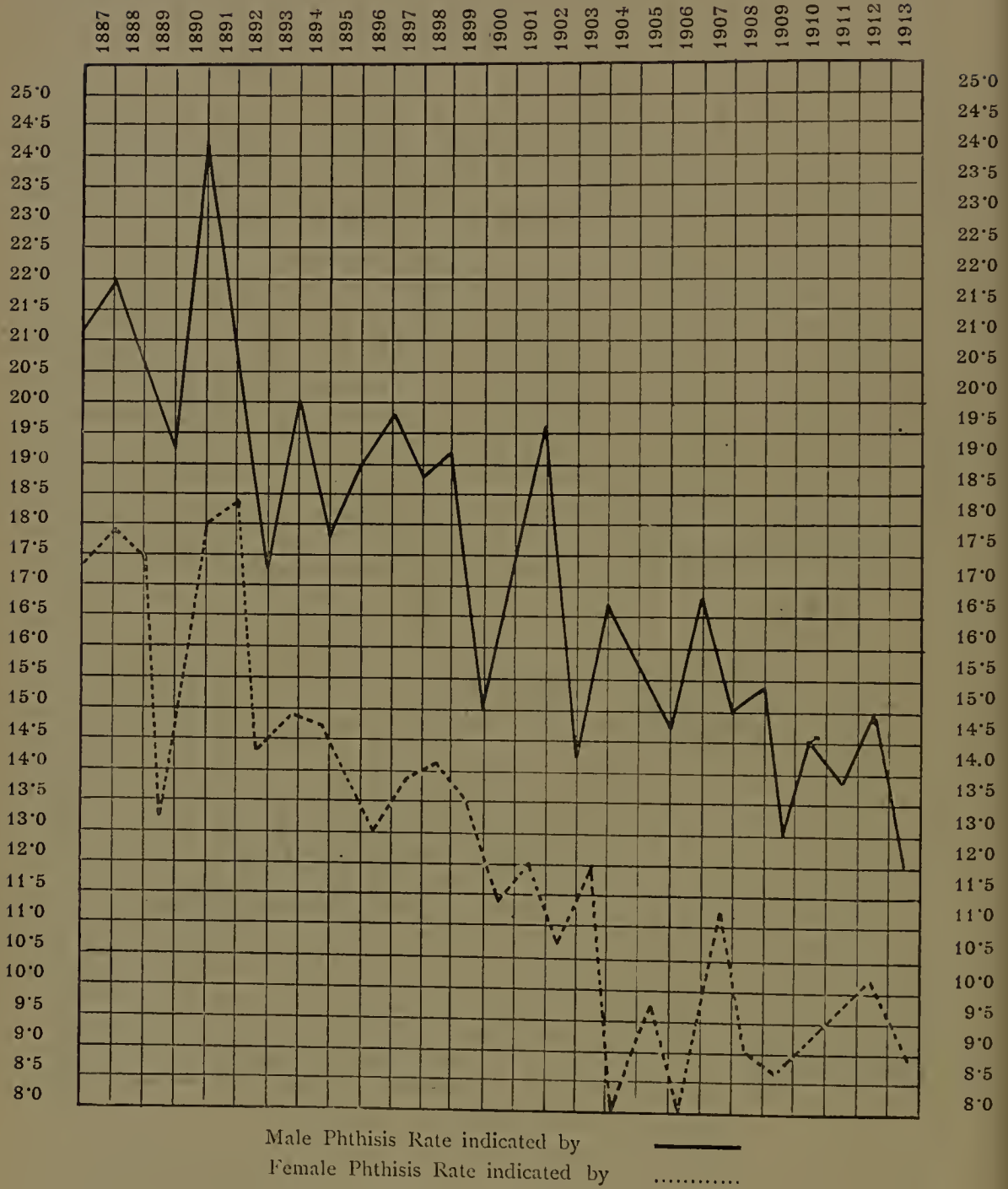
Considering the deaths in relation to sex the death-rate from pulmonary tuberculosis was in 1913 among males, 1·23 per 1,000, and among females, 0·89 per 1,000. Applying the standardising factors for purposes of comparison the standardised male death-rate was 1·10 per 1,000, and the standardised female death rate was 0·82 per 1,000; the standardised rate for the whole population in pulmonary tuberculosis is 0·95 per 1,000. The chart on page 48, shows that the general death-rate in the male sex for the past thirty years has always been greater than that of the female sex, while the fall in the male death-rate has at the same time during that period been correspondingly less.

The notification of pulmonary tuberculosis was under the general orders of the Local Government Board compulsory throughout the whole year, and the notifications received numbered 964. These

DEATH RATES FROM PULMONARY TUBERCULOSIS PER 10,000 OF THE POPULATION
IN ENGLAND AND WALES AND BRADFORD, 1882-1913.



DEATH RATE FROM PHTHISIS PER 10,000 OF THE POPULATION.



notifications classified according to age and sex are seen in the following table.

NOTIFICATION OF PULMONARY TUBERCULOSIS, 1913.

	PRIMARY NOTIFICATIONS												Total Notifications (i.e., including cases previously notified by other Doctors)
	AGE PERIODS												
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and up- wards	Total	
Males	—	8	32	48	27	49	108	108	73	46	16	515	633
Females	2	6	43	44	37	61	104	90	32	18	12	449	514
Total	2	14	75	92	64	110	212	198	105	64	28	964	1147

At the present moment the total number of notifications of pulmonary tuberculosis can hardly be taken as an index of the prevalence of this form of the disease. Generally speaking notification chiefly refers to those well established cases respecting which the diagnosis is no longer in doubt, but with the further development of antituberculous work which is now taking place, many cases in an early stage and possibly of a doubtful nature will be brought to light, and for some years the number of notifications may be expected to be high.

(B) *Other Forms of Tuberculosis.* Deaths, 116 ; Mortality rate per 1,000, 0.40.

RECORD OF PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Deaths	145	121	118	135	141	110	106	94	99	116

MORTALITY RATE PER 1,000 IN PREVIOUS YEARS.

	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Bradford	0.52	0.43	0.43	0.47	0.49	0.39	0.37	0.33	0.35	0.39
England and Wales..	0.54	0.49	0.50	0.47	0.47	0.45	0.43	0.41	0.33	—

There was some increase in the number of deaths and in the death rate from the forms of tuberculosis other than pulmonary. The death rate is the highest that has occurred during the past four years. The standardised death-rates for other forms of tuberculosis for Bradford in 1913 are for males 0.57, for females 0.38, and generally, 0.47, per 1,000.

Notification of other forms of tuberculosis was only in operation during the last eleven months of the year, when 377 cases were notified. (See Table V., page 166.)

(b). MEASURES FOR PREVENTION AND CURE.

The Tuberculosis Scheme. The Health Committee have been much occupied in developing a scheme for the prevention and treatment of Tuberculosis. Temporary arrangements had been made in the middle of 1912 for carrying out antituberculosis work and during 1913 permanent arrangements were determined upon. The temporary arrangements consisted of the opening of a tuberculosis dispensary with a staff of tuberculosis officers and nurses, and the setting aside of Bierley Hall Hospital for the treatment of pulmonary cases. One tuberculosis medical officer began duty in May, 1912, and a second officer in April,

1913. At Bierley Hall Hospital fifty beds were at first available for patients, and accommodation was found there in 1913 for other sixteen patients by the erection of shelters and the rearrangement of the wards. As this hospital is excellently situated the cases admitted have chiefly been those in which there was some prospect of cure. For the later cases requiring isolation and educative treatment provision was made last year at Leeds Road Hospital by setting aside a pavilion with twenty-eight beds. The total residential accommodation therefore under the temporary arrangements of the City Council amounts to ninety-six beds. At Bierley Hall Hospital a resident physician was appointed in 1913 and at Leeds Road Hospital a resident assistant physician was appointed early in 1914 for this and other work.

The permanent arrangements provide for a central well-equipped dispensary in place of the temporary and ill-adapted dispensary at present in use. In addition it was decided to erect a new sanatorium at Grassington and to extend the accommodation at Bierley Hall.

The plans of the new sanatorium at Grassington have been prepared and during the current year a Local Government Board inquiry has been held. This institution will contain 152 beds, fifty-two of which are for men, fifty-two for women, and forty-eight for children. The accommodation for children is in a separate part of the institution, and special provision has been made for their education while in the sanatorium.

At Bierley Hall the extension will provide for fifty cases of surgical tuberculosis, and any further accommodation for tubercle which experience may prove necessary can be arranged for here.

It is the intention of the Council when the permanent scheme is in operation to deal with all cases of tuberculosis whether insured or

non-insured, whether or not in receipt of poor law relief, and whether suffering from the pulmonary form of the disease or other forms.

At the present moment the beds occupied in poor law and other institutions not belonging to the City Council by cases of pulmonary tuberculosis from Bradford numbers about 114. The great majority of the patients occupying these beds are late cases of the disease, but if the success hoped for attends the antituberculosis campaign an early real decrease ought to take place in the number of late cases.

Since the commencement of the work in Bradford both insured and non-insured have been treated at the dispensary and residential institutions.

Arrangements with the Insurance Committee. The first agreement made with the Insurance Committee provided for the use of the dispensary and sanatorium on payment of sums calculated on the number of patients recommended there, and for the services of the officers of the Corporation on payment of a lump sum. While this agreement worked well it was felt to be unnecessarily complicated and likely to retard the free development of the work which was the common object of both the Insurance Committee and the City Council. A new agreement was therefore made along the lines suggested in the memorandum of the Local Government Board of 7th November, 1913, by which all the institutions of the Corporation, residential and non-residential, and the services of all the officers engaged in antituberculosis work were made available for the purposes of the Insurance Committee. This agreement was completed during the current year, and provided :—

- (1) That the Insurance Committee pay to the Council a sum calculated at the rate of 9d. per head of insured persons eligible for sanatorium benefit less a sum equal to that which will be required annually by the Committee to defray administration and other expenses in respect of such benefit, such last-

mentioned sum not to exceed, for the purposes of this agreement, the amount represented by 1d. per head of insured persons in any one year.

- (2) That the Council provide for the Insurance Committee fifty beds for sanatorium and hospital treatment, and the use of dispensary and medical advice, and
- (3) That the Agreement continue in force for a period of twenty years from 12th January, 1914, and be subject to modification or extension by mutual agreement (except as to the period of its continuance) or, in default of agreement, as may be determined by the Local Government Board.

The negotiations throughout were of a most harmonious character.

Work done during 1913. On the notification of a case of Tuberculosis it is visited at home by one of the nurses and inquiries are made as to the possible sources of infection, the danger of the spread of the disease, the housing accommodation and the general sanitary circumstances. Advice is given as to the hygienic treatment of the case and the patient is urged to attend the dispensary for general inspection and treatment if need be. Arrangements are made at the same time for the examination of contacts which is done at the dispensary. The number of such primary visits made in 1913 was 1,119. On a consideration of all the facts thus elicited respecting each case, the results of the clinical examination at the Dispensary and the report of the private medical attendant, the most suitable method of treatment is determined upon, the case receiving one or more of the following forms of treatment: (a) Domiciliary; (b) Dispensary; (c) Sanatorium, and (d) Hospital.

Domiciliary treatment has been suggested (i.) in advanced bed-ridden cases usually living in good homes; (ii.) at the patient's special

request when this is feasible (there have been very few such cases) ; and (iii.) in cases leaving an institution in which special treatment at the dispensary is unnecessary.

Dispensary treatment has been given (i.) alone with or without previous observation in hospital in a large number of cases ; and (ii.) after a period of prolonged treatment in an institution ; and (iii.) along with domiciliary treatment, the patient attending the dispensary for consultation and inspection purposes.

Sanatorium treatment has been advised in early cases without temperature with or without the administration of tuberculin. In sanatorium cases graduated labour and exercise has been carefully given.

Hospital treatment has been recommended in (i.) advanced cases with some hope of improvement ; and (ii.) advanced cases in a hopeless condition with the object of removing a source of infection from the home.

All cases are kept in touch with either by their continuous attendance at the dispensary or by repeated home visitation by the nurses. The number of visits made by the nurses in 1913 in addition to those made on the receipt of notification was 6,144. The general results of treatment have been very encouraging and as the work becomes better known and appreciated the patients themselves and their medical attendants are utilising in an increasing degree the facilities offered. At present the work is handicapped by the increasing pressure which is being put upon the temporary arrangements, but the Committee are anxiously pushing forward their complete scheme.

The results of treatment in 422 cases treated since the 15th July, 1912, are shown in the following table :—

GENERAL RESULTS OF TREATMENT IN CASES OF PULMONARY
TUBERCULOSIS.

	Sanatorium.			Hospital			Dispensary.			Total.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Greatly improved ..	33	35	68	17	11	28	29	30	59	79	76	155
Improved	7	4	11	17	5	22	13	16	29	37	25	62
Unrelieved	4	4	8	6	5	11	5	7	12	15	16	31
Worse.. .. .	—	1	1	2	1	3	1	2	3	3	4	7
Died	—	—	—	3	—	3	4	5	9	7	5	12
Remaining under Treatment 11/1/14	15	14	29	10	6	16	65	45	110	90	65	155
Total Cases Treated	59	58	117	55	28	83	117	105	222	231	191	422

NOTES :—Dispensary cases include only those who have received dispensary treatment alone.
 “Greatly Improved” means that the patient's working capacity is almost restored.
 “Discharged unrelieved” includes 2 males and 1 female under Sanatorium Treatment,
 1 male under Hospital Treatment, and 4 males and 5 females under Dispensary
 Treatment, who were discharged for other than Medical reasons.

The total persons admitted from Bradford to residential institutions in 1913 so far as is known was 568 ; and the cases discharged 436 ; the admission to municipal institutions being 177 ; and the discharges 165.

The total number of cases which had passed through the tuberculosis dispensary since its opening to 31st December, 1913, was 1527, of which 367 were contacts. The examination of contacts presents the greatest difficulty in antituberculosis work. This examination to be of

real service must be of a very careful and detailed character. The "walk past" advocated in certain quarters has proved in Bradford of little value for the detection of early or doubtful cases among contacts. It is a matter of extreme difficulty to get contacts to come to the dispensary for examination. The value of such a medical examination is not appreciated by the contact who feels well, while with the delicate contact the results of the examination is dreaded. In any case it is a trouble to come to the dispensary which at the present time few contacts care to take. It is a matter for consideration whether some other methods should not be resorted to for contact examination. For children the services of the school medical staff could be utilised and the examination made at the schools or at a children's tuberculosis dispensary. This latter arrangement has to some extent been already carried out in Bradford by the setting aside of a children's day at the dispensary. For adults contact examination might by arrangement be carried out in the homes when the contacts do not come to the dispensary, but for the success of such a system of home contact examination two things are necessary: (i.) an increased staff to carry the work out; and (ii.) a further improvement in the relationship with the general medical profession, as harmonious co-operation in a matter of this description is essential.

Methods of Treatment. Dr. Vallow, the Tuberculosis Officer, has made a careful analysis of different methods of treatment of tuberculosis in use in Bradford, and his results are given in full in the report which follows. His report deals with 150 cases divided in three groups of fifty, each group treated by different methods. The fifty cases in each group have not been in any way selected, but taken indiscriminately as they arose. Though the numbers are too small to permit of any general conclusion being drawn, the care and accuracy with which the facts have been got together enhance the value of the record.

REPORT BY DR. VALLOW ON DIFFERENT METHODS OF TREATMENT.

I have carefully analysed the different methods of treatment adopted in Bradford with the object of ascertaining how far each method of treatment is successful, and how far our policy of treatment can be improved.

The introduction of the use of tuberculin has complicated the analysis of the results of Sanatorium and Hospital treatment, and I have therefore been compelled to adopt a classification different from that usually employed.

It is as follows: (1) Cases suitable for tuberculin treatment with or without sanatorium treatment; (2) "Emulsion" cases with or without Sanatorium or Hospital treatment; and (3) Children treated with or without Sanatorium treatment, and with or without tuberculin treatment.

(1) *Tuberculin Treatment with or without Sanatorium Treatment.* In December, 1912, I analysed the results of fifty cases treated with tuberculin, and in May, 1914, I brought the results up to date.

Of the fifty cases twenty-two were treated both at the Sanatorium and the Dispensary, the period of Sanatorium treatment varying from one to six months, the average being eighty-six days, and twenty-eight were treated at the Dispensary alone.

RESULTS IN TERMS OF WORKING CAPACITY.

Working Capacity.	Before Treatment. (June, 1912).	Immediately after treatment.	Present time May 30th, 1914.
Full	32%	82%	76%
Partial	40%	12%	12%
None	28%	6%	12%

Fatality rate .. 6%

Five of these fifty cases were advanced and tuberculin was only given at the request of the patient ; of forty-five cases considered to be suitable for tuberculin treatment the results with respect to working capacity was, on May 30th, 1914, full in 83 per cent. of the cases, partial in 11 per cent., and none in 6 per cent. ; the fatality rate per cent. was 0.0.

It will thus be seen that a great amount of benefit has been derived from this treatment in selected cases. The results can be used as a "possible standard" to be aimed at, if the diagnosis is made early enough, and treatment at once commenced.

I have come to the conclusion that Tuberculin is likely to benefit one in every three or four of the cases.

Table T. (1) gives in great detail the main facts concerned with each case. The diagnosis of tubercle has been made by the practitioner in thirty-four of the cases, and confirmed at the Dispensary, and at the Dispensary in sixteen cases. Of the sixteen diagnosed at the Dispensary, four had tubercle bacilli in the sputum, seven had no tubercle bacilli in the sputum, and in five the sputum was not examined, as the diagnosis was undoubted. The location of the lesion has been placed under the heading of "Diagnosis." The length of Dispensary, Sanatorium, and Post-Sanatorium Dispensary Treatment has been given. The dosage, kind of tuberculin, and length of tuberculin treatment have been tabulated. The weights at the commencement of treatment, after Sanatorium treatment, and at the end of each tuberculin course are given, as also the working capacity before, during, and after treatment, and the general condition of the patient. The result of the sputum examinations is given and, under the heading of "Lesion," the effect of treatment has been described.

(2) "*Emulsion*" Cases with or without Sanatorium or Hospital Treatment. The kind of treatment adopted in these "emulsion" cases has been as follows:—(a) Emulsion, Cod Liver Oil, Extract of Malt, Malt and Oil, or Virol has been given ; (b) Sanatorium or Hospital treatment has been advised in every case, but for various reasons some of the patients have been unable to accept this method of treatment ; and (c) Care and after-care have been given as far as possible.

The types of case receiving this treatment have been (1) Old Sanatorium Cases, not receiving tuberculin (treated at a Sanatorium some time before—not the Bierley Hall Hospital) ; (2) Cases receiving

TABLE T. (1).

CASES TREATED WITH TUBERCULIN WITH OR WITHOUT SANATORIUM TREATMENT.

Case	Sex	Age	Occupation	Notified	Diagnosis	Dis- primary	San- atorium	Tuberculin Treat- ment		Weight at admission		Working Capacity		General Condition		Lesion
								Date of admission	Date of discharge	Initial	Final	Before	During	After	Before	After
I.	F.	40	Housewife	Yes	Tub. glands of neck	23 months	8 weeks	Oct. 28, 1912	May 27, 1913	st. 110 lb. 120 10 0	st. 110 lb. 120 10 0	Partial	Partial	Full	Poor	Healed glands disappeared
II.	M.	55	Printer	Yes	Bilateral phthisis	17 months	16 weeks	July 4, 1912	Nov. 10, 1912	9 9 10 10	9 9 10 10	Partial	Partial	Full	Poor	Yes
III.	F.	33	Washer	Yes	Bilateral apical phthisis	4 weeks	4 weeks	June 28, 1912	Dec. 16, 1912	7 4 7 4	7 6 7 6	Partial	Partial	Full	Fair	Yes
IV.	M.	40	Mill manager	Yes	Four glands apical phthisis	10 months	...	July 22, 1912	April 14, 1913	10 0 11 0	10 0 11 0	Partial	Partial	Full	Fair	No
V.	M.	48	Stonemason	Yes	Extensive disease	23 weeks	...	June 12, 1912	Nov. 11, 1912	9 10 9 10	9 7 9 7	None	None	Partial	Poor	Yes
VI.	F.	33	Cotton whiner	Yes	Early right apical disease	9 months	7 weeks	Aug. 19, 1912	Dec. 5, 1912	7 0 7 0	7 0 7 0	Partial	Partial	Full	Fair	No
VII.	F.	48	Housewife	Yes	Extensive disease	18 months	...	July 8, 1912	April 21, 1913	7 0 7 0	7 0 7 0	Partial	Partial	Full	Fair	No
VIII.	M.	29	Clerk	Yes	Early left apical disease	7 months	...	June 17, 1912	Dec. 16, 1912	9 4 9 4	9 4 9 4	Full	Full	Full	Fair	No
IX.	F.	21	Drawer	Yes	Bilateral disease	12 months	...	July 22, 1912	April 25, 1913	7 10 7 10	7 10 7 10	Full	Full	Full	Fair	Yes
X.	M.	29	Woolworker	Yes	Bilateral disease	1 month	...	July 30, 1912	Jan. 19, 1913	8 6 8 6	8 6 8 6	Full	Full	Full	Fair	Healed
XI.	M.	21	Brushmaker	Yes	Right apical disease	12 months	...	Aug. 8, 1912	Mar. 17, 1913	9 7 9 7	9 7 9 7	Partial	Partial	Full	Fair	Yes
XII.	F.	41	Charwoman	Yes	Extensive with suppurated nodes	16 months	...	Feb. 20, 1912	Feb. 17, 1913	10 5 10 5	10 5 10 5	Partial	Partial	Full	Fair	Yes
XIII.	F.	27	Housewife	Yes	Early lesion right apical	1 month	6 months	July 16, 1912	Feb. 3, 1913	7 11 7 11	7 10 7 10	Full	Full	Full	Fair	Yes
XIV.	F.	28	Cloth folder	Yes	Lesion right apical	3 weeks	4 weeks	July 14, 1912	Nov. 11, 1912	7 11 7 11	7 11 7 11	Full	Full	Full	Fair	Yes
XV.	F.	14	Millhand	Yes	Lesion left apical	2 months	5 months	Aug. 13, 1912	Feb. 28, 1913	6 11 6 11	6 11 6 11	Partial	Partial	Full	Poor	Healed
XVI.	M.	12	School	Yes	Bilateral phthisis	3 weeks	6 months	June 27, 1912	Jan. 7, 1913	5 0 5 0	5 0 5 0	None	None	Full	Poor	Healed
XVII.	F.	28	Spinner	Yes	Bilateral disease	15 months	...	Aug. 8, 1912	July 7, 1913	8 5 8 5	7 10 7 10	Partial	Partial	Full	Fair	Yes
XVIII.	F.	21	Spinner	Yes	Apical disease and bronchitis	11 months	1 month	Aug. 13, 1912	Jan. 31, 1913	6 8 6 8	6 8 6 8	Partial	Partial	Full	Poor	Yes
XIX.	F.	18	Twister	Yes	Early apical disease	8 months	...	Aug. 11, 1912	Feb. 28, 1913	7 4 7 4	7 4 7 4	Full	Full	Full	Fair	Yes
XX.	F.	28	Domestic	Yes	Early apical disease	7 months	...	July 15, 1912	Feb. 24, 1913	9 2 9 2	9 2 9 2	Full	Full	Full	Fair	Yes
XXI.	M.	40	Woolcomber	Yes	Early apical disease	12 weeks	5 weeks	June 19, 1912	Jan. 2, 1913	9 10 9 10	9 10 9 10	Full	Full	Full	Poor	Healed
XXII.	M.	18	Apprentice brushmaker	Yes	Hemoptysis— sign. inf.	9 months	...	Sept. 20, 1912	June 23, 1913	10 10 10 10	10 10 10 10	Full	Full	Full	Poor	Healed
XXIII.	M.	39	Brushmaker	Yes	Right apical disease	1 month	1 month	July 15, 1912	Dec. 30, 1912	9 6 9 6	9 6 9 6	Partial	Partial	Full	Fair	Yes
XXIV.	F.	26	Domestic	Yes	Early apical disease	10 months	...	July 23, 1912	May 9, 1913	8 4 8 4	8 4 8 4	Full	Full	Full	Fair	Yes
XXV.	F.	12	School	Yes	Tubercle and bronchitis	7 months	7 months	Aug. 26, 1912	June 23, 1913	4 6 4 6	4 6 4 6	None	None	School	Fair	Healed
XXVI.	F.	11	School	Yes	Glands of neck (?) Lung signs	7 months	7 months	Aug. 26, 1912	June 23, 1913	5 2 5 2	5 2 5 2	None	None	School	Fair	Healed
XXVII.	F.	35	Housewife	Yes	Bilateral disease	15 weeks	11 weeks	Oct. 16, 1912	Dec. 18, 1912	10 10 10 10	10 10 10 10	None	None	Full	Poor	Yes
XXVIII.	M.	20	Woolcomber	Yes	Early apical disease	12 weeks	12 weeks	Aug. 13, 1912	Mar. 14, 1913	5 8 5 8	5 8 5 8	Partial	Partial	Full	Fair	No
XXIX.	M.	13	School	Yes	S. T. T. gland local reaction	...	8 months	July 16, 1912	June 6, 1913	11 4 11 4	11 4 11 4	Partial	Partial	Full	Fair	Yes
XXX.	M.	39	Iron dresser	Yes	Bilateral disease	2 weeks	12 weeks	July 16, 1912	May 23, 1913	10 9 10 9	10 9 10 9	Partial	Partial	Full	Fair	Yes
XXXI.	M.	56	Stonemason	Yes	Right apical disease	11 months	...	June 17, 1912	Nov. 13, 1912	10 11 10 11	10 11 10 11	None	None	Partial	Poor	Yes
XXXII.	F.	9	School	Yes	Extensive disease	0 months	...	July 9, 1912	April 29, 1913	4 5 4 5	4 5 4 5	None	None	None	Very poor	In st. quo.
XXXIII.	M.	39	Yarn packer	Yes	Early lesion	13 months	...	Aug. 6, 1912	June 26, 1913	11 7 11 7	11 7 11 7	None	None	Full	Fair	Healed
XXXIV.	M.	38	Engineer	Yes	Bilateral disease ad- vanced	21 weeks	...	July 9, 1912	Nov. 18, 1912	8 7 8 7	8 7 8 7	Partial	Partial	Partial	Poor	In st. quo.
XXXV.	F.	26	Printer	Yes	Extensive bilat- eral disease	11 months	...	July 2, 1912	Mar. 13, 1913	6 4 6 4	6 4 6 4	None	None	None	Poor	In st. quo.
XXXVI.	F.	23	Spinner	Yes	Extensive bilat- eral disease	8 months	...	Aug. 1, 1912	Mar. 11, 1913	6 10 6 10	6 10 6 10	None	None	None	Very poor	...
XXXVII.	M.	38	Saddler	Yes	Early apical disease	12 months	...	June 17, 1912	Mar. 27, 1913	9 8 9 8	9 8 9 8	Partial	Partial	Full	Fair	Yes
XXXVIII.	F.	30	Domestic	Yes	Subacute tuberculosis test. general apex	2 weeks	4 months	Sept. 2, 1912	Aug. 7, 1913	7 13 7 13	7 13 7 13	Partial	Partial	Full	Fair	Healed
XXXIX.	F.	22	Wool ware- house	Yes	Early apical disease	10 months	...	Nov. 1, 1912	July 10, 1913	9 10 9 10	9 10 9 10	Full	Full	Full	Fair	Healed
XL.	M.	56	Letterpress printer	Yes	Apical disease and bronchitis	10 months	...	Aug. 19, 1912	Jan. 28, 1913	6 12 6 12	6 12 6 12	Full	Full	Full	Fair	Yes
XLI.	F.	26	Housewife	At ter	Bilateral disease	5 months	...	Oct. 24, 1912	April 7, 1913	9 7 9 7	9 7 9 7	Full	Full	Full	Fair	Yes
XLII.	F.	30	Millhand	Yes	S. T. T. gland local reaction	6 weeks	15 weeks	Sept. 2, 1912	Nov. 5, 1912	7 13 7 13	7 13 7 13	Partial	Partial	Full	Fair	Healed
XLIII.	M.	8	School	Yes	Basal phthisis	18 months	...	Aug. 24, 1912	Aug. 9, 1913	4 0 4 0	4 0 4 0	Full	Full	Full	Fair	Healed
XLIV.	M.	18	Carter	Yes	Lesion left apical	13 months	...	Oct. 11, 1912	Sept. 17, 1913	10 10 10 10	10 10 10 10	Partial	Partial	Full	Fair	Yes
XLV.	F.	34	Housewife	Yes	Glands of neck	4 months	...	Nov. 28, 1912	Mar. 27, 1913	8 4 8 4	8 4 8 4	Partial	Partial	Full	Fair	Yes
XLVI.	F.	6	School	Yes	Basal phthisis	4 months	6 months	Oct. 20, 1912	Dec. 20, 1912	3 0 3 0	3 0 3 0	None	None	School	Fair	Yes
XLVII.	F.	34	Housewife	Yes	Bilateral disease	4 months	4 months	Nov. 1, 1912	Dec. 8, 1912	7 2 7 2	7 2 7 2	Partial	Partial	Full	Fair	Yes
XLVIII.	M.	33	Hawker	Yes	Early apical disease	5 months	...	Nov. 11, 1912	Sept. 22, 1913	3 4 3 4	3 4 3 4	Partial	Partial	Full	Fair	Yes
XLIX.	M.	7	School	Yes	Basal phthisis	12 months	...	Nov. 11, 1912	Sept. 22, 1913	3 4 3 4	3 4 3 4	Partial	Partial	Full	Fair	Yes
L.	F.	33	Cotton whiner	Yes	Right apical disease	...	8 weeks	Aug. 13, 1912	Dec. 5, 1912	7 0 7 0	7 0 7 0	Partial	Partial	Full	Poor	Yes

TABLE T. (2).

EMULSION CASES WITH OR WITHOUT SANATORIUM TREATMENT.

Case	Age	Sex	Notified		Diagnosis	"EMULSION" CASES.			Weight			General Condition	Working Capacity			
			Pract.	Disp.		Treatment	Dispensary	Sanatorium	Post Infectional Dependency	Con- mence- ment	After Sanatorium		At Present	Before	After	
I.	23	M.	Yes	...	Bilateral disease (old Sanatorium case)	3 months	...	9 weeks	...	...	5 months	st. lb. 9 11	st. lb. 10 0	Improved	Partial	Partial
II.	31	M.	Yes	...	Extensive disease	...	...	7 months	...	...	2 months	7 8 1/2	8 10 1/2	Improved	Full	Full
III.	34	M.	Yes	...	Bilateral disease	2 months	...	4 months	...	...	2 months	10 9	11 11 1/2	Improved	None	None
IV.	32	M.	Yes	...	Right apical disease	...	...	4 1/2 months	...	...	3 months	8 6 1/2	9 9 1/2	Improved	None	None
V.	20	M.	Yes	...	Lesion right apex. Apex middle lobe right lung	...	...	3 months	...	...	5 months	9 4	9 8 1/2	Improved	None	None
VI.	24	M.	...	Yes	(?) Tubercle	5 months	...	...	...	...	...	9 10	...	Improved	None	None
VII.	12	F.	...	Yes	(?) Left apex	...	...	6 months	...	...	...	6 9 1/2	7 10 1/2	Improved	None	None
VIII.	26	M.	Yes	...	Lesion right apex (old Sanatorium case)	...	...	4 months	...	...	1 month	9 8	10 3 1/2	Improved	Full	Full
IX.	36	M.	Yes	...	Early tubercle	...	...	6 weeks	...	...	5 weeks	11 3 1/2	11 6 1/2	Improved	None	None
X.	33	F.	Yes	...	(?) Right apex	1 month	...	9 weeks	...	...	6 weeks	6 12	7 7 1/2	Improved	Partial	Partial
XI.	46	M.	Yes	...	Tubercle of lungs	6 weeks	...	9 weeks	...	...	4 months	9 10 1/2	11 4 1/2	Improved	None	None
XII.	43	M.	Yes	...	Right lung	2 months	...	9 weeks	...	...	...	11 0	12 9 1/2	Improved	Full	Full
XIII.	33	F.	Yes	...	Right apex	6 months	...	...	...	...	...	6 12	...	Improved	None	None
XIV.	19	M.	Yes	...	Glands of neck. Tubercle of lungs	1 month	...	3 months	...	...	3 months	7 10 1/2	8 13	Improved	Full	Full
XV.	29	F.	Yes	...	Left apex	8 months	...	...	...	...	...	8 10	...	Improved	None	None
XVI.	24	F.	Yes	...	Tubercle of lungs	2 months	...	14 weeks	...	...	1 month	8 8	9 1 1/2	Some improvement	None	None
XVII.	54	M.	Yes	...	Tubercle of lungs	1 month	...	6 weeks	...	...	8 months	9 8	10 6 1/2	Improved	None	None
XVIII.	56	M.	Yes	...	Left apex	1 month	...	7 weeks	...	...	5 months	10 7	11 4	Marked improvement	None	None
XIX.	6	F.	...	Yes	Glands of neck, etc. Early tubercle of lungs	6 months	...	14 weeks	...	...	5 months	3 1	3 7 1/2	Improved	Partial	Partial
XX.	10	F.	...	Yes	Bronchitis and tubercle	12 months	...	...	...	...	...	3 0	...	Some improvement	Full	Full
XXI.	11	M.	...	Yes	Injunctive tubercle. (?) Tubercle of lungs	10 months	...	...	...	...	...	5 9	...	Improved	Full	Full
XXII.	16	F.	Yes	...	Extensive bilateral disease	2 months	...	2 months	...	...	2 months	6 9 1/2	7 4 1/2	Slight improvement	None	None
XXIII.	29	M.	Yes	...	(?) Tubercle	11 months	...	...	...	...	...	8 6	...	Some improvement	None	None
XXIV.	23	F.	Yes	...	Right apex	5 months	...	2 months	...	...	1 month	7 12 1/2	7 9 1/2	Improved	None	None
XXV.	43	M.	Yes	...	Left apex	3 months	...	6 weeks	...	...	1 month	9 4 1/2	9 13	Improved	None	None
XXVI.	23	M.	Yes	...	Extensive disease right lung. Disease left apex. Pleural effusion	...	...	8 months	...	...	7 months	7 12	9 11 1/2	Improved	None	None
XXVII.	40	F.	Yes	...	Bilateral disease	2 months	...	2 months	...	...	2 months	6 4 1/2	7 10	Improved	None	None
XXVIII.	38	F.	Yes	...	Right apex	2 months	...	11 weeks	...	...	3 months	5 12 1/2	6 11	Improved	None	None
XXIX.	30	M.	Yes	...	Bilateral disease	8 months	...	...	...	...	...	11 3 1/2	...	Improved	None	None
XXX.	19	F.	Yes	...	Extensive bilateral disease	...	...	4 1/2 months	...	...	12 months	6 12	7 10 1/2	Poor improvement in Sanatorium. Case maintained outside	None	None
XXXI.	37	F.	Yes	...	Extensive bilateral disease	8 months	...	9 weeks	...	...	9 weeks	7 11	7 9	Poor	Partial	Partial
XXXII.	56	M.	Yes	...	Chronic bronchitis and tubercle super-added	19 months	...	...	...	...	...	9 6 1/2	...	In st. quo.	None	None
XXXIII.	44	M.	Yes	...	Lesion right apex (old Sanatorium case)	5 months	...	...	...	...	...	11 3 1/2	...	In st. quo.	None	None
XXXIV.	44	F.	Yes	...	Tubercle of throat	14 months	...	...	...	...	...	5 11	...	In st. quo.	None	None
XXXV.	48	M.	Yes	...	Bilateral disease	19 months	...	...	...	...	...	7 9 1/2	...	In st. quo.	None	None
XXXVI.	24	F.	Yes	...	Bronchitis and tubercle	13 months	...	...	...	...	...	6 12	...	In st. quo.	None	None
XXXVII.	30	F.	Yes	...	Bronchitis and tubercle	...	...	3 months	...	...	3 months	8 10 1/2	8 12 1/2	In st. quo.	None	None
XXXVIII.	32	M.	Yes	...	Asthma and bronchitis	...	...	9 weeks	...	...	2 months	8 10	9 12 1/2	In st. quo.	None	None
XXXIX.	36	M.	Yes	...	Cough disease. (?) Tubercle left apex	...	...	3 months	...	...	3 months	10 3	10 12 1/2	In st. quo.	None	None
XL.	30	M.	Yes	...	Bilateral disease	1 month	...	18 weeks	...	...	1 month	8 11	10 2	Improved	None	None
XLI.	41	M.	Yes	...	Slight bilateral disease	...	...	13 weeks	...	...	4 months	8 3 1/2	9 4 1/2	Improved	None	None
XLII.	34	F.	Yes	...	Bronchitis and tubercle	8 months	...	...	...	...	...	8 2	...	In st. quo.	None	None
XLIII.	45	M.	Yes	...	Tubercle right lung	7 months	...	...	...	...	...	8 5 1/2	...	In st. quo.	None	None
XLIV.	27	F.	Yes	...	Tubercle right lung	14 months	...	...	...	...	...	8 2 1/2	...	In st. quo.	None	None
XLV.	27	F.	Yes	...	Bronchitis and tubercle	...	...	4 months	...	...	2 months	8 1	8 4	Improved	None	None
XLVI.	21	F.	Yes	...	Tubercle right lung	...	...	18 weeks	...	...	...	7 6	6 9 1/2	Worse	None	None
XLVII.	56	M.	Yes	...	Bilateral disease (advanced)	7 months	...	...	...	...	...	8 6 1/2	...	In st. quo.	None	None
XLVIII.	40	F.	Yes	...	Bilateral disease (very advanced)	16 months	...	...	...	...	...	6 2 1/2	...	In st. quo.	None	None
XLIX.	36	M.	Yes	...	Very extensive disease	...	...	14 weeks	...	...	...	7 11	8 10 1/2	In st. quo.	None	None
L.	33	F.	Yes	...	Collapse right lung due to pleuritic effusion (tuberculous)	8 months	...	...	...	...	...	11 3 1/2	...	In st. quo.	None	None

TABLE T. (3).

CHILDREN WITH OR WITHOUT TUBERCULIN TREATMENT AND WITH OR WITHOUT SANATORIUM TREATMENT.

Case.	Age.	Sex.	Notified.		Recommended by School Medical Officer.	Diagnosis.	TREATMENT.			Tuberculin Treatment.			Weight.		General Condition.
			Pact.	Disp.			Dispensary.	Sanatorium.	Dispensary.	Dose.	Period.	Commencement.	After Sanatorium.	At Present.	
I.	13	M.	...	Yes	Yes	Apical lesion	...	3 months	Yes	'00015CC P.T.O. '000015CC B.E. '00015CC O.T.	3 months	at lbs. 5 1	at lbs. 5 9	at lbs. 5 10	Very good
II.	11	M.	...	...	Yes	Incipient tubercle (O) Tubercle of lungs	Extract of malt and Parrish's food 10 months	...	Still attending	...	...	5 0	...	6 5	Improved
III.	6	F.	Yes	...	Yes	Tubercle lungs Glands of neck	Extract of malt and Parrish's food 10 months	...	Still attending	...	...	3 9	...	3 13 $\frac{1}{2}$	Improved
IV.	8	M.	Yes	...	...	Incipient Glands of neck	Yes	20 weeks	Still attending	'0015CC P.T.O. '0005CC P.T.O.	5 months	3 13 $\frac{1}{2}$	4 0 $\frac{1}{2}$	4 1	Improved
V.	12	M.	...	Yes	...	Tubercle of lungs	Yes	14 weeks	...	'000015CC B.E. '0005CC B.E.	7 months	6 12 $\frac{1}{2}$	7 0 $\frac{1}{2}$	7 6	Improved
VI.	13	F.	...	...	Yes	Incipient Glands of neck	Yes	9 weeks	Still attending	'0015CC P.T.O. '0005CC P.T.O.	9 weeks	4 7 $\frac{1}{2}$	4 7 $\frac{1}{2}$	4 7 $\frac{1}{2}$	Improved
VII.	12	M.	Yes	...	...	Glands of neck	...	43 months	Still attending	'000015CC B.E. '0005CC B.E.	6 months	3 0 $\frac{1}{2}$	3 13 $\frac{1}{2}$	4 3	Improved
VIII.	10	F.	...	Yes	...	Bronchitis and tubercle	Emulsion, cod liver oil and Parrish's food, etc.	...	Still attending	...	...	3 0	...	3 13	Some improvement
IX.	14	M.	Yes	...	...	Incipient tubercle	Emulsion	...	...	...	...	5 20	...	5 13	Improved
X.	8	F.	Yes	...	...	Incipient Glands of neck	Emulsion	...	Still attending	'000015CC B.E. '000015CC B.E.	7 months	3 11	...	3 8	Improved
XI.	12	M.	Yes	...	Yes	Incipient tubercle	Emulsion	Open air School	Still attending	'000015CC B.E. '00075CC B.E.	10 months	4 8	5 0 $\frac{1}{2}$	5 0 $\frac{1}{2}$	Improved
XII.	9	F.	...	...	...	Glands of neck	Emulsion and Malt and Oil	...	Still attending	...	...	3 9	...	4 0 $\frac{1}{2}$	Improved
XIII.	12	M.	Yes	...	Yes	Extensive tubercle of lungs and bronchitis	Extract Malt and necessary medicines	...	Still attending	...	...	4 5	...	4 10 $\frac{1}{2}$	In st. quo
XIV.	10	M.	...	...	Yes	Incipient tubercle	Extract Malt and Parrish's food	...	Still attending	...	...	4 0	...	4 4	Improved
XV.	7	M.	Yes	...	Yes	Glands of neck and tubercle of lungs	Emulsion and Parrish's food	...	Still attending	...	...	3 7 $\frac{1}{2}$	...	4 1	Improved
XVI.	13	M.	...	...	Yes	Tubercle, left base	Malt and Oil	...	Still attending	...	...	4 0 $\frac{1}{2}$	...	5 0	Improved
XVII.	8	M.	...	...	Yes	Incipient Glands of neck	Emulsion and Malt and Oil	...	Still attending	...	...	3 6	...	3 13	Some improvement
XVIII.	11	F.	Yes	...	Yes	Lesion right apex	...	4 months	Still attending	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	5 months	4 10 $\frac{1}{2}$	5 0 $\frac{1}{2}$	5 7	Much improvement
XIX.	9	M.	Yes	...	Yes	Basal phthisis	Emulsion	...	Still attending	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	11 months	3 5	...	3 13 $\frac{1}{2}$	Improved
XX.	7	M.	...	Yes	Yes	Lesion right lung, A.P. +	...	4 months	...	'0015CC P.T.O. '00015CC B.E.	11 months	3 0	...	3 4	Good
XXI.	10	F.	Yes	...	Yes	Left apex	...	4 months	Still attending	'00015CC P.T.O. '00015CC B.E.	4 months	3 5	3 13 $\frac{1}{2}$	3 10	In st. quo
XXII.	11	F.	Yes	...	Yes	Lesion right base	...	4 months	Still attending	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	9 months	5 1	5 0 $\frac{1}{2}$	5 10	Improved
XXIII.	12	F.	Yes	...	Yes	Incipient tubercle	Emulsion, etc.	...	...	...	...	3 12	...	4 3	Not much improvement
XXIV.	10	M.	Yes	...	...	Incipient tubercle	...	...	...	'00015CC P.T.O. '00015CC B.E.	6 months	3 0 $\frac{1}{2}$	...	3 12	Improved
XXV.	10	F.	Yes	...	...	Glands of neck, tubercle of lungs	Yes	6 weeks	Still attending	'000015CC B.E. '000475CC B.E.	8 months	4 9	5 1 $\frac{1}{2}$	5 13	Improved
XXVI.	10	F.	...	...	Yes	Incipient tubercle	Yes	10 weeks	Still attending	'000015CC B.E. '000475CC B.E.	10 weeks	4 4 $\frac{1}{2}$	4 10 $\frac{1}{2}$	4 5	...
XXVII.	8	M.	...	...	Yes	Incipient tubercle	...	4 months	Still attending	'00015CC P.T.O. '00015CC B.E.	11 months	3 7 $\frac{1}{2}$	3 13 $\frac{1}{2}$	4 1 $\frac{1}{2}$	Improved
XXVIII.	10	M.	Yes	...	Yes	Early tubercle and bronchitis	Yes	8 months	Still attending	'00015CC P.T.O. '00015CC B.E. '000035CC B.E.	15 months	4 8	5 0 $\frac{1}{2}$	5 7 $\frac{1}{2}$	Improved
XXIX.	8	F.	Yes	...	...	Extensive tuberculous, etc.	Parrish's Food, Malt and Oil, etc.	...	Still attending	...	...	3 3	...	3 12	Some improvement
XXX.	10	F.	Yes	...	...	Chronic bronchitis with tubercle	Yes	...	Still attending	'00015CC P.T.O. '00015CC B.E.	12 months	3 12 $\frac{1}{2}$	...	4 6	Improved
XXXI.	11	F.	...	Yes	Yes	Incipient tubercle	Yes	Open-air school	...	'000015CC B.E. '0000475CC B.E.	4 months	5 7 $\frac{1}{2}$	...	5 11	Improved
XXXII.	6	M.	...	Yes	Yes	Incipient tubercle	Yes	Open-air school	...	'000015CC B.E. '0000475CC B.E.	4 months	3 3 $\frac{1}{2}$	...	3 5	Improved
XXXIII.	12	M.	...	Yes	...	Basal phthisis	Yes	6 months	Still attending	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	7 months	5 0	...	5 12 $\frac{1}{2}$	Improved
XXXIV.	12	F.	...	Yes	Yes	Tubercle and bronchitis	...	7 months	Still attending	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	11 months	4 0	4 7	4 7	Improved
XXXV.	11	F.	...	Yes	...	Incipient tubercle	...	7 months	...	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	11 months	4 7	5 2 $\frac{1}{2}$	4 13	Improved
XXXVI.	9	F.	...	...	...	Basal phthisis	Emulsion, Malt and Oil	...	...	...	...	4 1	...	4 11	Improved
XXXVII.	12	M.	Yes	...	...	Tubercle of lungs	...	26 weeks	Still attending	'00015CC P.T.O. '00015CC B.E.	26 weeks	4 12 $\frac{1}{2}$	5 0 $\frac{1}{2}$	5 3	Good
XXXVIII.	6	F.	Yes	...	...	Basal phthisis	Yes	4 months	Still attending	'00015CC P.T.O. '00015CC B.E. '00015CC O.T.	14 months	2 13	3 12 $\frac{1}{2}$	3 3	Pair
XXXIX.	7	F.	Yes	...	...	Incipient tubercle	Yes	5 weeks	Still attending	'000075CC B.E. '000015CC B.E.	13 months	3 2 $\frac{1}{2}$	3 9 $\frac{1}{2}$	3 12	Improved
XL.	8	M.	Yes	...	Yes	Incipient tubercle	Malt & Oil, etc.	...	Still attending	'00015CC P.T.O. '00015CC B.E.	12 months	3 11	...	4 0	Good
XLI.	11	M.	Yes	...	...	Incipient tubercle	Yes	...	Still attending	'000015CC B.E. '000015CC B.E.	5 months	3 4 $\frac{1}{2}$	3 10 $\frac{1}{2}$	3 8 $\frac{1}{2}$	Improved
XLII.	6	M.	...	...	Yes	Tubercle of lungs	Yes	6 months	Still attending	'000015CC B.E. '00015CC B.E.	4 months	3 13	4 0 $\frac{1}{2}$	4 9 $\frac{1}{2}$	Improved
XLIII.	8	F.	Yes	...	Yes	Incipient tubercle	Yes	5 months	Still attending	'000015CC B.E. '000015CC B.E.	5 months	4 1	4 6	4 7	Improved
XLIV.	11	M.	...	...	...	Incipient tubercle	Yes	...	Still attending	'000015CC B.E. '000015CC B.E.	10 months	3 10	...	3 13	Improved
XLV.	7	F.	...	Yes	Yes	Incipient tubercle	...	...	Still attending	'00015CC P.T.O. '00015CC B.E.	...	3 11	...	3 10 $\frac{1}{2}$	In st. quo
XLVI.	9	F.	Yes	...	...	Tubercle of lungs	Emulsion and Malt and Oil	...	Still attending	'000015CC B.E. '000015CC B.E.	4 months	3 6 $\frac{1}{2}$	...	3 8	Good
XLVII.	7	M.	...	...	...	Incipient tubercle	Yes	...	Still attending	None (subject to "fix")	...	3 1	3 7 $\frac{1}{2}$	3 7	Improved
XLVIII.	6	F.	...	Yes	...	Glands of neck and tubercle of lungs	Yes	14 weeks	Still attending	'0015CC P.T.O. '00015CC B.E.	12 months	4 5	...	4 4	In st. quo
XLIX.	9	F.	Yes	...	...	Advanced lesion	Yes	...	Still attending	'00015CC B.E. '000075CC B.E.	10 months	4 6	...	4 12	Improved
L.	10	M.	...	Yes	Yes	Incipient tubercle	Yes	...	Still attending	'00015CC B.E. '000075CC B.E.	10 months	4 6	...	4 12	Improved

tuberculin treatment. We have now no cases refusing tuberculin treatment—when the Dispensary was opened many patients refused this treatment, but the patients have now learned that tuberculin is only given in selected cases and that these patients improve, consequently we have to refuse to give this preparation on many occasions in unsuitable cases ; (3) Cases unsuitable for tuberculin treatment. Of the fifty cases thirty-one had Sanatorium or Hospital treatment, followed by either Dispensary or Domiciliary treatment, while nineteen were treated at the Dispensary alone.

RESULTS IN TERMS OF WORKING CAPACITY.

Working Capacity	Before Treatment	After Treatment
Full	12%	40%
Partial	8%	18%
None	80%	42%

Table T. (2) contains the complete analysis. In these cases the diagnosis of tubercle was made by the practitioner in forty-five cases, and at the Dispensary in five cases.

(3) *Children with or without Sanatorium Treatment and with or without Tuberculin Treatment.* The treatment of School Children suffering from early tuberculosis is very satisfactory.

I believe that the results are somewhat better when tuberculin is given in suitable cases, but the "Emulsion" type of case, with open-air treatment, progresses much more satisfactorily than adults.

Table T. (3) contains a complete detailed account of each of fifty cases.

IV.—THE MEANS FOR PREVENTING MORTALITY IN CHILD BIRTH AND INFANCY.

(A) MATERNITY.

At the close of the year there were fifty-eight midwives practising in the City of whom twenty-two held the Central Midwives Board Certificate or a certificate from a recognised hospital, while thirty-six were on the register as *bona fide* practitioners before the passing of the Midwives Act, 1902. During the year three *bona fide* midwives died.

In Bradford the midwives appear to attend about 50 per cent. of the births. The number of notifications of sending for medical help was 364, or roughly 13·5 per cent of their cases. A list of these notifications follows. In 265 cases medical aid was called in on account of the mother, and in ninety-nine cases on account of the child. In the cases where medical help was required on account of the mother, in 211 the circumstances arose during the confinement, and in fifty-five during the ensuing ten days.

MEDICAL AID NOTIFICATIONS, 1913.

MOTHER.

Delayed labour	..	..	64	High temperature	..	..	10
Premature births	..	..	12	Prolapse of uterus	..	..	1
Malpresentations	..	..	31	White leg	..	..	2
Contracted pelvis	..	..	10	Eclampsia	..	..	5
Ruptured perinaeum	..	27		Epilepsy	..	..	2
Instrumental labour	..	33		Mastitis	..	..	4
Adherent placenta	..	..	9	Varicose veins	..	..	1
Uterine inertia	..	..	2	Retained membranes	..	..	1
P.P. Hæmorrhage	..	..	5	Purulent discharge	..	..	1
A.P. Hæmorrhage	..	..	10	Illness of mother after con-			
Placenta prævia	..	..	3	finement	..	..	11

MEDICAL AID NOTIFICATIONS, 1913—*continued*.

MOTHER.									
Abortions	..	..	..	6	Still-births before mid-wife's				
Threatened abortion		..	..	1	arrival	..	..	..	7
Weak Heart	..	..	..	6					
									265
CHILD.									
Malformations	..	..	..	7	Inflammation in eyes	..	..	..	46
Debility of infant	..	..	..	38	Cyanosis	..	..	..	2
Convulsions	..	..	..	5	Circumcision	..	..	..	1
Total									99

Notice was sent to the Local Supervising Authority of the deaths of seven infants under the care of midwives before the arrival of a medical practitioner. The midwives reported under the Rules of the Central Midwives Board 111 cases of still-births.

The number of inspections made by the Midwives Inspector was 632, of which 338 were inspections of the midwives' homes, registers and appliances, and 294 special inspections of their work.

Four infringements of the Rules of the Central Midwives Board were dealt with, and in 3 of the cases a *prima facie* case of negligence was found.

The complaint in each of these three cases was of neglect in dealing with inflammation of the eyes in infants. One midwife was struck off the Roll, another was put under special supervision for six months, while the third was cautioned.

The number of cases of puerperal fever occurring in the practice of midwives was nine.

A course of lectures for the purpose of preparing pupil midwives for the Examination of the Central Midwives Board was given under

arrangements made with the Education Committee by a recognised teacher and was attended by twenty-nine pupils.

(B) PRENATAL HYGIENE.

The number of deaths which arise in Bradford from congenital causes is very large and shows little sign of any material decrease. At the present moment it accounts for roughly 30 to 40 per cent. of the mortality amongst infants. These deaths chiefly occur within the first four weeks of life and the numbers at these ages in each year from 1905 are shown in the following table:—

DEATHS IN THE FIRST FOUR WEEKS OF LIFE.

Year	Week				Total	Proportion of Infantile Deaths
	1	2	3	4		
1905	185	35	39	39	295	33·8
1906	189	40	45	18	292	32·3
1907	153	43	37	30	263	36·9
1908	202	28	60	28	318	37·0
1909	189	26	29	29	273	42·8
1910	154	34	29	32	248	35·8
1911	185	40	31	26	282	36·7
1912	165	29	32	18	244	44·1
1913	187	38	36	18	279	37·6

But the full extent of the vital loss to the community is not estimated by the number of actual deaths registered as due to congenital causes for each year in Bradford. A large number of livable children

are born dead, who but for the same causes might have lived healthy lives. The number of these still-born infants cannot be correctly stated, but a near approximation is got from the notifications under the Notification of Births Act, 1907. During the past four years the numbers of still-births notified have been in 1910, 167; in 1911, 220; in 1912, 230; and in 1913, 270. The causes which bring about these deaths and still-births amounting together in Bradford each year to about 500 have relationship to the life of the infant before birth.

It is hardly possible at the present time to enumerate all these causes, but they may be considered generally in three groups, according to the times in pregnancy in which they have their chief effect. In the first group the causes act during the whole of pregnancy, in the second particularly in the later months, and in the third at the time of delivery.

Disease in the mother is the greatest factor amongst the first group of causes. In attempting to deal specially with deaths arising from congenital causes there are some reasons against making this group the first point of attack. The infants who are likely to survive as the offspring of diseased parents are not those who will in the majority of cases be free from disease themselves. The efforts of public health authorities in these cases are best spent in eradicating disease in the parents. Fortunately the number of infants who die in Bradford from this group as compared with the other groups of congenital causes is comparatively small.

The causes which operate chiefly during the later months of pregnancy are very varied. Maternal hygiene may be defective in so many ways and a very real amount of ignorance on the subject exists among women. The failure to seek advice undoubtedly prevents many defects being remedied at the proper time. At this stage of pregnancy also, malnutrition in the mother and inappropriate work such as factory labour have the most potent effect upon the well-being of the coming child.

Abnormal and mismanaged labours as well as the difficulty found by certain classes of the community in obtaining skilled assistance in child birth are the principal causes operating at the time of delivery.

The difficulties surrounding any attempt by a health authority to take beneficial action in antenatal and natal hygiene are great, but they are not insurmountable. The subject is at present under consideration by the Health Committee, and it is hoped that some practical method of prevention may be evolved.

(C) INFANCY.

During the year 1913 the number of births registered in Bradford was 5,811, while the number notified under the Notification of Births Act, 1907, was 5,666.

During the past three years about 95 per cent. of the births registered have been notified.

RECORD OF PREVIOUS YEARS.

	1909	1910	1911	1912	1913
Births registered ..	5507	5490	5480	5586	5811
Births notified.. ..	4910	5035	5307	5582	5666
*Notifications to 100 registrations ..	69·1	91·7	96·8	99·9	97·3

* The comparisons here are not quite accurate as the births notified include still-births which are not registered.

Although the percentage of births notified is satisfactorily high, considerable delay occurs frequently in the dispatch of the notification. This apparently is due to the confusion which is apt to arise when one duty is required of so many different persons.

The notifications under the Act must be made by (1) the father of the child if he is actually resident in the house, and (2) any person in attendance on the mother at the time of or within six hours of the birth. The cases to be notified include not only live births, but also still-births after the seventh month of pregnancy. The notification has to be made within thirty-six hours after the birth and a penalty of 20s. is attached to failure to notify within that time with the proviso that a person shall not be liable to a penalty if he satisfies the Court that he had reasonable grounds to believe that notice had already been given by some other person. The persons notifying and the time of receipt of notification is seen in the following table:—

TIME OF RECEIPT OF NOTIFICATIONS OF BIRTH IN 1913.

Persons notifying	Receipt of Notification					1—2 months	2—3 months	Total	Per cent. received late
	Within 2 days	3—7 days	1—2 weeks	2—3 weeks	3—4 weeks				
Doctor.. ..	1775	136	26	11	4	1	1	1954	9.1
Midwife	2536	91	10	2	—	1	—	2640	3.9
Father	819	62	17	2	3	4	—	907	9.7
*Doctor and Midwife	79	1	—	—	—	—	—	80	1.2
*Father and Doctor	15	—	—	—	—	—	—	15	0.0
*Father and Midwife	3	—	—	—	—	—	—	3	0.0
Institutions ..	67	—	—	—	—	—	—	67	0.0
Total	5294	290	53	15	7	6	1	5666	6.5

* When two notifications have been received only one entry has been made in the table under the time of the receipt of the first notification.

Adding the births not notified it would appear the notification is not properly carried out in about 10 per cent. of the cases. During

the year proceedings were instituted against two unregistered midwives for failing to notify births, but in these cases no conviction was secured as one pleaded she had given the card to her son to post who had failed to do so, while the other said the doctor who attended twenty-four hours later had promised to notify. The doctor in the latter case not being in attendance within six hours did not require to send a notification certificate.

Following the receipt of the notification a large proportion of the births are visited by the Health Visitors to advise the mother as to the rearing of the infant. The visit is almost invariably welcomed especially when it is a first baby. The mother is encouraged to talk about her family and the visitor tries to form in her own mind an estimate of the peculiar dangers to its health to which this baby is likely to be exposed, and when the risks seem great the case is marked for further early visiting. The baby is weighed and particulars of the general condition and weight are noted for reference.

The selection of the cases for visitation depends largely on the local knowledge of the visitor, but speaking generally all cases notified by midwives are visited as soon as possible after the birth as well as those cases with doctors in attendance where the home circumstances are known to be poor.

BIRTHS VISITED IN 1913.

Person in attendance	Times between Birth and Visit					Total
	1 week	2 weeks	3 weeks	4 weeks	Over 4 weeks	
Doctor ..	321	363	137	65	133	1019
Midwife ..	1637	587	107	49	93	2473

The infants noted for re-visitation fall generally into one or more of the following six classes :—(1) infants found hand fed or partly hand fed at the time of the first visit ; (2) infants whose mothers are likely to give over breast feeding before nine months have elapsed ; (3) infants in families where already one or more infantile deaths have occurred ; (4) premature infants and the infants of diseased parents ; (6) infants who from any other cause social, or physical, appearing to the health visitor require continuous supervision.

Of the 3,492 births visited it was considered that 438 required visitation once only during the first year while 3,054 were selected for continuous observation during their first year of life. Of these cases 257 passed before that time from the health visitor's survey, the majority of whom left the district, while 2,777 were regularly under supervision.

The first and foremost duty of the health visitor is to promote breast feeding and the early visitation places her in a good position to do this. It cannot be too strongly insisted on that no other kind of feeding of infants is to be compared with that which nature has provided, and any system of preservation of infant life which does anything to encourage the belief that there is to be found an efficient substitute for the healthy mother's milk is foredoomed to failure. It is right and proper that every effort should be made to provide the hand fed infant with the best food which the wisdom of man can devise, but the provision of such a food must be confined to infants who from a good and sufficient cause can not be fed naturally. It must never be used by the mother as a frivolous excuse for giving breast feeding up.

Of the 1,894 infants under observation who in 1913 completed their first year of life, 896 only were breast fed for more than six months, 156 were hand fed from birth, 32 had mixed feeding from birth, while 810 were weaned or partially weaned before the age of six months.

FEEDING OF INFANTS COMPLETING THE FIRST YEAR.

	Hand fed from birth	Mixed feeding from birth	Wholly breast fed			
			Under 1 month	Under 3 months	Under 6 months	Under 9 months
Infants ..	156	32	335	283	192	896
Percentage	8.3	1.7	17.7	14.9	10.0	47.3

Only 47.3 per cent. of the children were breast fed for a period over six months ; there are therefore 52.7 per cent. not breast fed for six months.

Of the causes which operate in Bradford which interfere with breast feeding, married women's work is the chief, reference is made to this subject on page 105.

WORK OF MOTHERS VISITED IN 1913.

	Outside the home			Inside the Home
	Factories	Other Work	Total	
Within six months before birth ..	581	118	699	1195
Within six months after birth	334	81	415	*1479

* Including one mother who died.

From this table it will be seen that of the mothers visited 36.9 per cent. were working outside the home within six months before confine-

ment, while 21·9 per cent. went back to work within six months after confinement.

Out of the 52·7 per cent. of infants not breast fed for six months, after deducting the 21·9 per cent. whose mothers went back to work, there remains 30·8 per cent. in whom breast feeding was wholly or partly given up for some other reason. This is a very large proportion and not easily accounted for.

Poverty, in interfering with breast feeding, does so chiefly by sending the mother too early back to work and to a lesser extent when the mother remains at home by setting up a debility in herself. For the relief of this debility in the mother resulting from the impoverishment of the home and causing itself a failure in the sufficiency of breast milk the health visitors are, by the instructions of the Health Committee, able to do something by giving orders for the free supply of municipal milk for the use of the mother, and, by the kindness of various charitable persons, food of other characters, *e.g.*, bread and rolls, have been sent to destitute mothers on the recommendation of the visitors. It cannot also be doubted that the maternity benefit under the National Insurance Act, 1911, in affording material aid at the time of confinement greatly helps to maintain the mother's strength. But maternal malnutrition due to poverty arises from too far reaching a cause to be wholly remedied by such partial measures as these. It should also be noted here that maternal feeding by municipal milk is an expensive way of combating malnutrition in the mother. The function of lactation is not dependent on filtration, and substantial nourishing meals to mothers in suitable cases would equally if not better promote the secretion of milk.

But the state of health of the mother due to poverty explains only a very small proportion of the 30·8 per cent. of hand fed infants whose

mothers stay at home. Nor is the general state of health due to other causes sufficient to account for it, for of the mothers of the whole 1,894 infants under consideration in 1,273 cases it was thought to be good, in 503 cases fair, and in only 118 was the health stated to be poor. But even were it sufficiently great to account for the discontinuance of lactation the proper remedy in the majority of cases is surely to attempt to improve the mother's health while at the same time continuing breast feeding. The doctrine of the essentially pernicious influence of lactation on the mother's health is no longer held by any observant physician and the belief in an idiopathic failing in the function of the mammary glands in modern women is happily now supported by very few. Lactation itself is an integral feature of motherhood, and its failure in all or nearly all cases has definite ascertainable causes which must be dealt with successfully if the wastage of infant life is to cease.

The general care of the 1,894 infants was, in the opinion of the health visitors, stated to be good in 1,404 cases, in 437 cases it was thought to be fair, and in fifty-three cases poor.

The father's occupation in these families, where it could be ascertained, were as follows :—skilled workmen, 270 ; workers in mills, 666 ; labourers, 550 ; hawkers, 32 ; and miscellaneous, 369 ; The father's health was said to be very good in 1,577 cases ; fair in 237 cases ; and poor in eighty cases ; six fathers died shortly after the birth of the child.

Infant Consultations. This institution was established in the middle of 1912, and began work in temporary premises in Channing Hall where the work was continued throughout 1913.

The chief objects of the consultations are as follows :—

(a) To afford mothers the best available advice on all questions

affecting the health and welfare of infancy and generally to instruct mothers in infant hygiene.

- (b) To encourage all mothers wherever possible to breast feed their infants.
- (c) To prescribe in detail the exact dietary for all infants especially for those handfed, and to ascertain and afford if need be the means of procuring the special dietary required.
- (d) To maintain a skilled supervision of all infants brought to the consultations in order that any abnormal conditions may be detected at the earliest possible moment.
- (e) To provide medical treatment in hospital or otherwise of disease in infancy when this cannot be otherwise secured.

The Health Visitors co-operate with the Consultations and advise mothers to bring their infants there for further practical advice as to the best means of infant care. The visitors also follow up infants in attendance and see that the instructions given are properly carried out in the homes.

The Staff at the Consultations is engaged whole time in the work and consists of two medical women and an adequate number of nurses and others.

Little difficulty has been encountered in having all infants brought to the Consultations where the circumstances specially require such supervision. In practice the Consultations are particularly used in the cases of

- (a) Infants in poor homes.
- (b) Infants whose mothers go out to work.
- (c) Infants necessarily hand fed and other delicate or ailing infants.
- (d) Illegitimate infants.

An infant brought to the Consultation is seen by one of the medical staff there who examines it carefully and records all the important facts in its physical condition and family history. The mother's own health is enquired into and detailed advice is given as to the rearing of the infant and the maintenance of maternal health during lactation. In those hand fed infants where more simple milk preparations are indicated advice is given to the mother as to how she may prepare these. Such instruction is both theoretical and practical, the mother being actually shown the process of preparation. When, however, the food necessary is of a complex character requiring laboratory methods it is prepared in the milk laboratory according to the prescription of the physician. If the infant is ailing the physician attempts to ascertain the cause of the illness and takes all necessary measures to secure treatment for it. A medical dispensary is provided at the Consultations, but drug treatment is only used as ancillary to other means, as the main object of the institution is to preserve the health of infants by hygienic measures. In addition to questions of feeding, the methods and kinds of clothing, bathing, washing the eyes and mouth, the general toilet of the skin, and all other questions of infancy receive attention, and instructions therein are given to the mothers.

Where an infant is so severely ill or requires more detailed attention than can be given as an outpatient at the Consultations the offer of a short period of residence in the infants' hospital is made. In the new premises now occupied the infants' hospital is attached.

It has been found necessary in the case of many poorer infants to make arrangements for the free provision of a suitable food where they are hand fed, and this has proved of great value.

The number of infants in attendance at the Consultations in the first year of working has been 1,523. No less than 808 of these babies

were sick when brought to the Consultation while 912 were either wholly or partly hand fed.

At the end of 1913 the total number of consultations held since the opening of the Institution was 25,207 affecting 2,362 infants.

The work has continuously expanded since its commencement and the premises in which it was being carried on soon proved hopelessly inadequate for the purpose. The erection of the new premises in Morley Street has now provided excellent accommodation and will permit a much fuller development of this important work.

(D) INFANT MORTALITY IN 1913.

It has already been noted on page 7 that there was a great increase in the infantile mortality rate last year. Table IV., page 164, gives in detail the diseases from which the deaths arose.

INFANTILE DEATHS IN PREVIOUS YEARS.

	1905	1906	1907	1908	1909	1910	1911	1912	1913
Zymotic diseases ..	58	57	50	45	34	71	48	23	33
Tuberculous diseases ..	27	28	26	38	28	23	14	13	28
Diarrhoea, &c.	142	216	55	162	45	96	180	25	156
Congenital causes ..	330	315	299	364	282	277	288	256	295
Pulmonary diseases ..	151	99	146	108	95	82	91	114	96
Convulsions ..	64	92	61	55	63	58	60	69	53
All other causes	101	96	76	418	90	88	84	53	80
Total ..	873	903	713	860	637	695	765	553	741

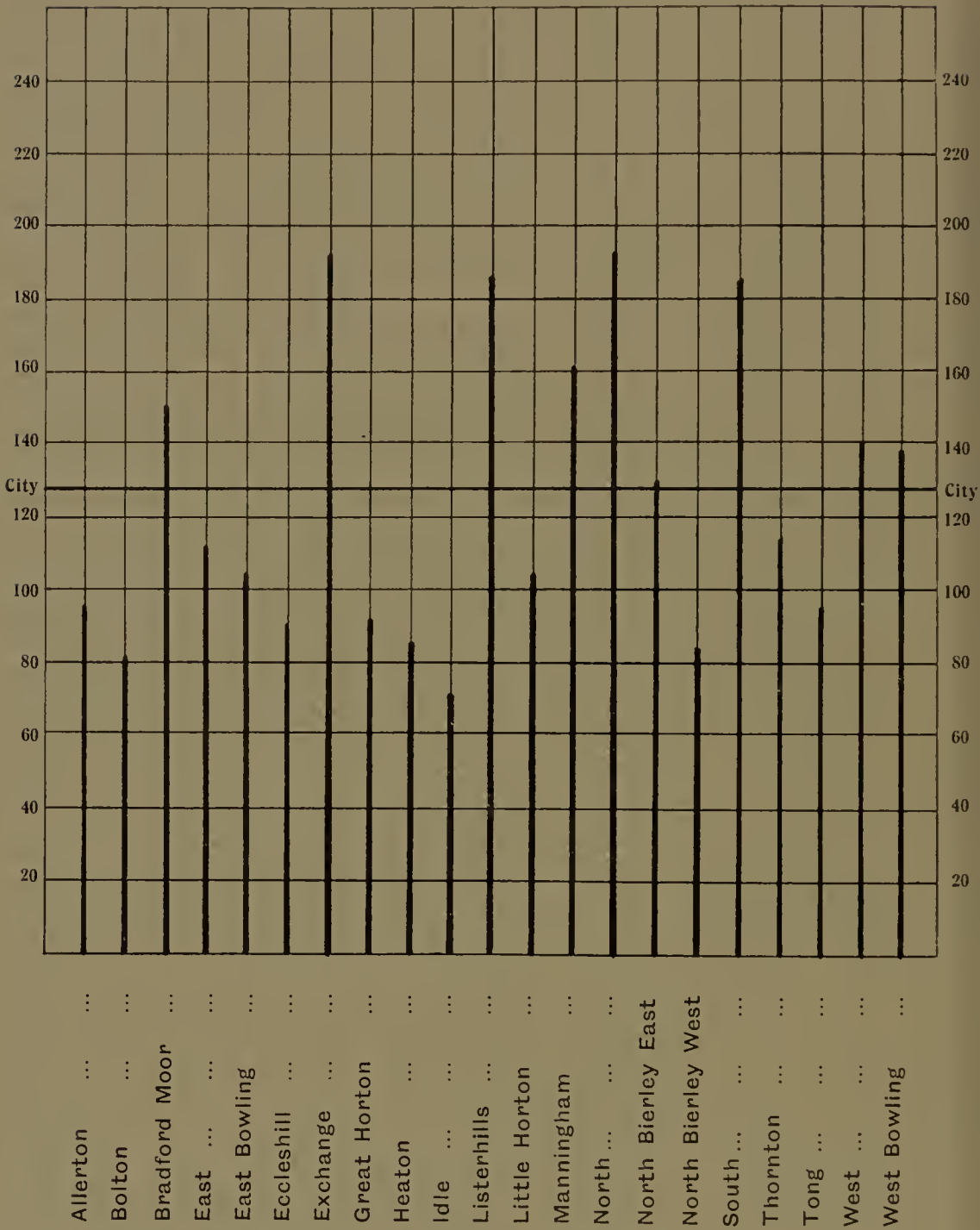
It will be seen that a very large increase took place in the number of deaths from diarrhoeal diseases, while smaller increases are noted in the number due to congenital causes, tuberculous diseases, zymotic diseases, and miscellaneous causes. The year 1913 ranks with the years 1905, 1906, 1908, and 1911 as one of high infantile mortality due mainly to the prevalence of summer diarrhoea. This high rate is to be associated mainly with the meteorological conditions pertaining throughout the summer and autumn. On account of the similarity of the weather in 1911 a more accurate comparison may be made with that year than with 1912. The infantile mortality rate in 1913 was 8.0 per cent. below that of 1911, while the death rate from diarrhoea and enteritis under two years was 12.9 per cent. below that of 1911. Both these figures are fairly satisfactory and show that some progress is being made.

The table on page 75, and the chart on page 79, show that a continuous fall is taking place in the infantile mortality rate in Bradford. There is still, however, much room for improvement and it is hoped that the greatly increased efforts now being made will still further and more rapidly reduce the rate.

INFANT MORTALITY IN BRADFORD AND ENGLAND AND WALES
FOR EACH YEAR, AND IN GROUPS OF FIVE YEARS SINCE 1871.

BRADFORD.		ENGLAND AND WALES.		BRADFORD.		ENGLAND AND WALES.	
	Average		Average		Average		Average
1871	220	208	158	153	1896	143	148
1872	200		150		1897	179	156
1873	205		149		1898	184	160
1874	189		151		1899	181	163
1875	202		158		1900	140	154
1876	176	166	146	145	1901	168	151
1877	157		136		1902	139	133
1878	178		152		1903	148	132
1879	152		135		1904	167	145
1880	176		153		1905	144	128
1881	154	160	130	139	1906	152	132
1882	174		141		1907	124	118
1883	147		137		1908	143	120
1884	181		147		1909	116	109
1885	144		138		1910	127	106
1886	168	170	149	145	1911	140	130
1887	179		145		1912	99	95
1888	153		136		1913	128	109
1889	181		144				
1890	169		151				
1891	181	176	149	151			
1892	155		148				
1893	198		159				
1894	144		137				
1895	203		161				

DIAGRAM SHOWING COMPARATIVELY THE INFANT MORTALITY PER
1000 BIRTHS IN THE MUNICIPAL WARDS, 1913.



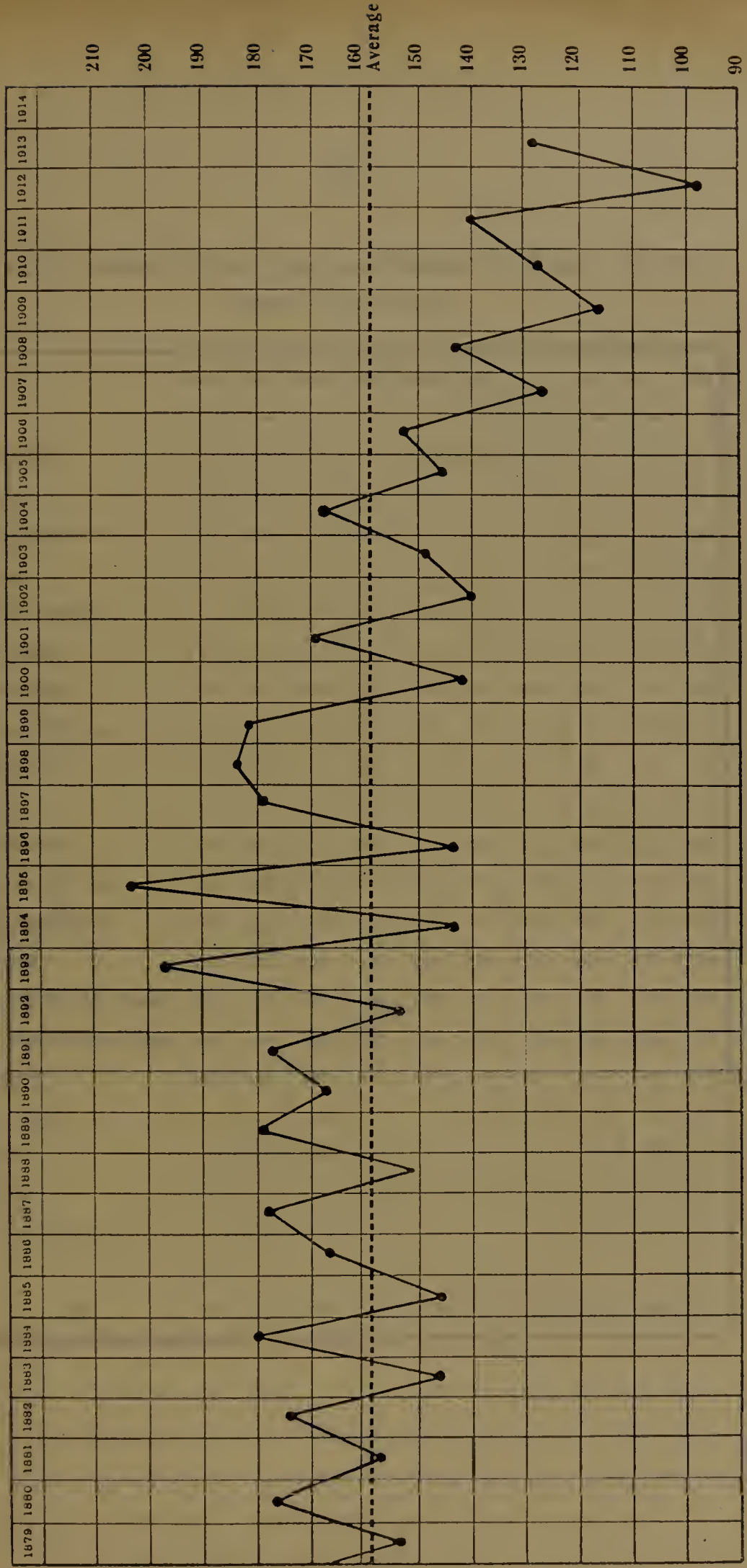
INFANT MORTALITY 1891—1913.

Year	Deaths under One Year of Age per 1000 Births.		
	Total.	Diarrhoeal Diseases.	Total less Diarrhoeal Diseases.
1891	181	14	167
1892	155	15	140
1893	198	12	186
1894	144	10	134
1895	203	52	151
1896	142	18	124
1897	179	23	156
1898	184	19	165
1899	181	22	159
1900	141	16	125
1901	168	35	133
1902	139	8	131
1903	148	19	129
1904	167	29	138
1905	144	21	123
1906	152	34	118
1907	124	11	113
1908	143	30	113
1909	116	6	110
1910	127	20	107
1911	140	32	108
1912	99	4	95
1913	128	27	101

The Ward record of infantile mortality is shewn on the table on page 79, and on the chart on page 76, where it will be seen that this rate was highest in Exchange, North, Listerhills, and South Wards, and the lowest in Idle, Bolton, North Bierley West, and Heaton Wards.

Enquiry into the method of feeding of 116 infants under one year who died from diarrhoea in 1913, showed that at the time of birth ninety-two of the infants were breast fed and twenty-four mixed or hand fed, but that shortly after birth many of the infants were taken off the breast so that at the end of the first month of life only sixty were breast fed and at the time when the fatal illness began only twelve were breast fed. If these figures be compared with the general results of enquiry as to the feeding of infants on page 68, the enormous advantage of breast feeding will be appreciated.

INFANT MORTALITY PER 1000 BIRTHS, 1879-1913.



Average for 35 years --157.

INFANT MORTALITY RATE PER 1,000 BIRTHS, IN WARDS, FOR THE
YEARS 1904 TO 1913.

		1904	1905	1906	1907	1908	1909	1910	1911	1912	1913
Allerton	92	127	113	82	132	92	64	98	76	95	
Bolton	106	126	112	103	95	119	63	72	70	81	
Bradford Moor ..	169	126	114	141	135	132	131	152	110	149	
East	163	123	120	114	161	93	92	156	99	112	
East Bowling ..	171	182	179	167	149	124	144	142	117	107	
Eccleshill	138	137	139	89	73	62	109	157	84	92	
Exchange	315	265	239	152	312	207	230	293	185	196	
Great Horton ..	136	102	100	116	108	81	131	51	76	90	
Heaton	142	129	108	91	132	72	152	94	69	87	
Idle	132	110	96	127	101	102	171	91	67	73	
Listerhills	140	152	172	168	173	163	147	195	129	189	
Little Horton ..	145	135	154	117	124	126	114	111	114	103	
Manningham	155	134	171	117	146	111	141	129	70	159	
North	272	216	222	176	236	100	166	230	126	194	
North Bierley (East)	140	152	183	94	126	131	108	161	68	129	
North Bierley (West)	142	82	98	81	90	112	75	106	144	82	
South	193	148	187	127	208	165	131	194	119	185	
Thornton	92	116	121	113	96	140	122	204	55	116	
Tong	178	202	82	55	126	140	114	135	68	94	
West	291	219	317	176	169	106	161	210	178	139	
West Bowling ..	170	145	168	122	133	122	99	103	73	137	
City	167	144	152	124	143	116	127	140	99	128	

DEATHS FROM DIARRHŒA, 1913.
RESULTS SHOWING THE FEEDING OF THE INFANTS.

Age at death in months	Manner of Feeding									Total
	At birth			Aged 1 month			At death			
	Breast	Mixed	Hand	Breast	Mixed	Hand	Breast	Mixed	Hand	
3	17	—	9	13	3	10	4	4	18	26
4	21	—	3	10	1	13	5	1	18	24
5	16	—	1	13	1	3	—	6	11	17
6	6	—	1	1	3	3	—	1	6	7
7	10	1	2	8	1	4	1	2	10	13
8	7	2	1	3	2	5	1	1	8	10
9	7	—	1	5	1	2	1	—	7	8
10	4	1	—	4	—	1	—	1	4	5
11	4	2	—	3	2	1	—	4	2	6
12	—	—	—	—	—	—	—	—	—	—
Total	92	6	18	60	14	42	12	20	84	116

V.—HOSPITALS.

In the table on page 22, of this report will be found a list of the various hospitals admitting cases from Bradford. In this part only municipal hospitals will be dealt with.

The Council possess at present two hospitals, Leeds Road Hospital and Bierley Hall Hospital, and have a right to admit patients suffering from infectious disease into three hospitals owned by the joint boards of Calverley, North Bierley, and Thornton.

The following summary shows the number and character of the cases admitted to these hospitals in 1913 :—

	Leeds Road	North Bierley	Calv'ley	Thrn'ton	Bierley Hall	Total
Scarlet Fever	335	33	25	16	—	409
Diphtheria	294	10	1	1	—	306
Typhoid Fever	45	5	—	2	—	52
Erysipelas	5	—	—	—	—	5
Zymotic Enteritis	139	—	—	—	—	139
Pulmonary Tuberculosis	—	—	—	—	177	177
	818	48	26	19	177	1088

(A) CITY HOSPITAL, LEEDS ROAD.

Dr. Kitchin the Medical Superintendent has prepared the following report with respect to the work done there :—

GENERAL ABSTRACT.

Remaining in Hospital, 31st December, 1912	...	...	...	75
Admitted during the year, 1913	...	...	..	683
			TOTAL	758
Discharged, relieved, or cured	...	...	...	627
Died	...	...	...	53
Remaining in Hospital, 31st December, 1913	...	...	...	78
			TOTAL	758

SCARLET FEVER.

AGE.	MALES.		FEMALES.		TOTALS.		Death Rate per Cent.
	No. Admitted.	No. Died.	No. Admitted.	No. Died.	No. Admitted.	No. Died.	
Under 1	...	...	1	...	1	...	...
1—2	2	...	...	...	2	...	...
2—3	10	...	6	...	16	...	...
3—4	17	2	11	...	28	2	7.1
4—5	16	...	5	1	21	1	4.7
Total under 5	45	2	23	1	68	3	4.4
5—10	65	...	71	3	136	3	2.2
10—15	37	...	32	...	69	...	..
15—20	17	...	15	...	32	...	...
20—25	2	...	11	...	13	...	...
25—30	1	...	1	...	2	...	...
30—35	...	...	2	...	2	...	...
35—40	1	...	...	...	1	...	...
40—45	...	...	1	...	1	...	...
TOTAL ...	168	2	156	4	324	6	1.8

ENTERIC FEVER.

AGE.	MALES.		FEMALES.		TOTALS.		
	No. Admitted.	No. Died.	No. Admitted.	No. Died.	No. Admitted.	No. Died.	Death- Rate Per cent.
Under 5	...	...	2	...	2	...	...
5—10	2	...	...	...	2	...	...
10—15	1	...	3	1	4	1	25
15—20	5	...	...	...	5	...	...
20—25	3	...	2	...	5	...	...
25—30	6	3	3	...	9	3	33·3
30—35	4	...	2	...	6	...	...
35—40	3	1	1	...	4	1	25
40—45	1	...	1	...	2	...	...
45—50	...	...	2	...	2	...	...
50—55	2	1	...	...	2	1	50
TOTAL ...	27	5	16	1	43	6	13·9

DIPHTHERIA.

AGE.	MALES.		FEMALES.		TOTALS.		
	No. Admitted.	No. Died.	No. Admitted.	No. Died.	No. Admitted.	No. Died.	Death- Rate. Per cent.
Under 1	4	3	...	...	4	3	...
1—2	4	1	6	1	10	2	20·0
2—3	8	1	4	1	12	2	16·6
3—4	5	1	8	3	13	4	30·7
4—5	15	1	14	2	29	3	10·3
Total under 5	36	7	32	7	68	14	20·5
5—10	59	8	68	9	127	17	13·3
10—15	25	2	23	...	48	2	4·1
15—20	5	...	14	1	19	1	5·2
20—25	5	...	8	...	13	...	...
25—30	2	...	5	...	7	...	...
30—35	2	...	4	...	6	...	...
35—40	...	...	2	...	2	...	...
40—45	...	...	...	...	...	...	...
45—50	...	...	1	...	1	...	...
TOTAL ...	134	17	157	17	291	34	11·6

SHOWING NUMBER OF CASES ADMITTED DURING EACH MONTH
OF 1913.

1913.	Scarlet Fever.			Enteric Fever.			Diphtheria.			Other Diseases.			Total Admissions.		
Month.	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total	M.	F.	Total.
January ...	21	24	45	3	...	3	9	14	23	2	...	2	35	38	73
February ...	16	17	33	...	1	1	11	17	28	...	...	...	27	35	62
March ...	19	7	26	2	...	2	12	7	19	1	...	1	34	14	48
April ...	15	9	24	...	1	1	7	13	20	1	...	1	23	23	46
May ...	18	12	30	2	4	6	13	17	30	1	1	2	34	34	68
June ...	10	14	24	3	...	3	7	13	20	...	1	1	20	28	48
July ...	12	19	31	1	...	1	15	18	33	2	...	2	30	37	67
August ...	6	15	21	1	...	1	7	14	21	2	2	4	16	31	47
September	6	11	17	1	1	2	18	11	29	1	3	4	26	26	52
October ...	14	9	23	4	1	5	10	13	23	...	1	1	28	24	52
November	20	12	32	9	5	14	11	11	22	3	...	3	43	28	71
December	11	7	18	1	3	4	14	9	23	2	2	4	28	21	49
TOTAL ...	168	156	324	27	16	43	134	157	291	15	10	25	344	339	683

OTHER DISEASES.

Erysipelas	4
Measles	5
Whooping Cough	1
Tonsilitis	7
Pneumonia	2
Meningitis	1
Pulmonary Tuberculosis	1
Tabes Mesenterica	1
Bulbar Paralysis	1
Carbuncle	1
Gangrene of Fauces	1
<hr/>	
TOTAL	25

Of these patients seven died—one from meningitis, one from whooping cough, one from pulmonary tuberculosis, one from tabes mesenterica, one from bulbar paralysis, one from carbuncle, and one from gangrene of fauces.

SUMMARY.

YEAR.	SMALL-POX.			ENTERIC FEVER.			SCARLET FEVER.			DIPHTHERIA.			OTHER DISEASES.			TOTALS.			From 1878 to 1913.	
	Cases.	Deaths.	Death-rate per 100.	Cases.	Deaths.	Death-rate per 100.	Cases.	Deaths.	Death-rate per 100.	Cases.	Deaths.	Death-rate per 100.	Cases.	Deaths.	Death-rate per 100.	Cases.	Deaths.	Death-rate per 100.	Aggregate No. of days spent in Hospital.	Average No. of days for each Patient
1878	5	1	20.0	55	13	23.6	148	17	11.5	...	...	...	27	3	11.1	237	34	14.3	9,263	39
1879	8	...	...	24	3	12.5	159	14	8.8	...	...	...	23	4	17.39	214	21	9.8	8,414	39
1880	2	1	50.0	60	8	13.3	248	38	15.3	...	...	...	54	7	12.9	364	54	14.8	13,192	36½
1881	21	2	9.5	61	7	11.5	317	42	13.2	...	...	...	27	...	...	426	51	11.97	16,073	37½
1882	26	3	8.8	88	17	19.3	213	31	14.5	...	...	...	39	5	12.8	366	56	15.32	14,766	40
1883	5	...	...	119	17	14.2	233	17	7.2	...	...	...	23	2	8.6	375	36	9.6	15,949	42½
1884	3	...	...	93	17	18.2	237	11	4.6	...	...	...	29	4	13.7	362	32	8.8	14,215	39½
1885	28	2	7.14	89	6	6.74	456	19	4.16	...	...	...	23	8	34.7	596	35	5.89	21,391	36
1886	4	...	...	83	8	9.63	625	29	4.64	...	...	...	14	2	14.3	726	39	5.37	29,305	40½
1887	3	...	...	79	7	8.86	830	21	2.27	...	...	...	9	5	55.5	921	33	3.58	38,609	42½
1888	16	2	12.5	57	6	10.53	283	12	4.24	...	...	...	11	1	9.9	367	21	5.72	16,479	46
1889	9	1	11.11	90	26	28.89	355	40	11.27	...	...	...	36	6	16.67	490	73	14.90	21,315	43½
1890	...	...	...	59	11	18.64	380	22	5.78	...	...	...	43	12	27.90	484	45	9.30	19,940	41½
1891	...	...	...	76	15	19.6	780	83	10.6	...	...	...	39	10	25.6	897	108	12.04	39,838	44
1892	25	4	16.6	41	11	26.8	587	27	4.6	...	...	...	32	7	21.8	685	49	7.2	29,191	42½
1893	935	100	10.6	11	4	36.3	228	17	7.8	...	...	...	12	1	8.3	1186	122	10.2	34,203	28.8

[illegible]

(B) THE CITY HOSPITAL.—BIERLEY HALL.

The Table shows the number of cases of Small-pox and other diseases isolated and treated at Bierley Hall:—

	1911	1912	1913	Total No. of days in Hospital, 1913	Average No. of days in Hospital
Small-pox ... ..	...	2	...	...	...
Convalescent Scarlatina	133	56	...	...	...
Phthisis ... ..	...	76	177	15365	93
	133	134	177	15365	93

(C) MAINTENANCE, &c.

Cost of Maintenance and Establishment Charges for the Year ended 31st March, 1914.

MAINTENANCE.

	Leeds Road £ s. d.	Bierley Hall £ s. d.
Cost of articles (food and drink), including stimulants and aerated waters	1791 12 1	1524 10 3
Cost of stimulants and aerated waters only	45 0 10	2 13 11
Cost per head of household and patients (all ages) per day, including stimulants and aerated waters ...	9·7d.	1s. 4d.
Cost per head of household and patients (all ages) per day of stimulants and aerated waters only	0·22d.	0·03d.

	Leeds Road.	Bierley Hall
Number of patients under 12 years of age ...	609	20
Number of patients over 12 years of age ...	209	157
Total number of patients	818	177

For the year ended March 31st, 1914, the cost of maintenance of patients admitted from Bradford to the conjoint Hospitals is as follows:—

	Half-year ended 31st March, 1914.				Half-year ended 30th Sept., 1913.			
	£	s.	d.		£	s.	d.	
North Bierley Joint Hospital...	0	19	8½	...	1	3	0½	per week.
Calverley Joint Hospital ...	0	17	6	...	0	15	4	„
Thornton Joint Hospital ...	0	18	7½	...	0	10	1	„

The following sums were paid during the year under the head of “Establishment Charges”:

North Bierley Joint Hospital ...	...	...	...	...	£877	14	6
Calverley Joint Hospital ...	...	...	...	...	562	4	5
Thornton Joint Hospital ...	...	...	...	...	415	16	0

NUMBER OF PATIENTS ADMITTED.

North Bierley Joint Hospital	{	Number of patients under 12 years ...	35
		Number of patients over 12 years ...	13
		Total number of patients ...	48

Calverley Joint Hospital ...	{	Number of patients under 12 years ...	19
		Number of patients over 12 years ...	7
		Total number of patients ...	26

Thornton Joint Hospital ...	{	Number of patients under 12 years ...	12
		Number of patients over 12 years ...	7
		Total number of patients ..	19

VI.—BACTERIOLOGICAL LABORATORY.

The total number of bacteriological examinations conducted for the local authority in 1913 was 3,382. Of these 1,679 were carried out at the Bacteriological Laboratory, 651 by the Veterinary Inspector at the Town Hall, 854 at the School Clinic, 150 at the Tuberculosis Dispensary, and forty-eight by the Leeds School of Medicine.

The following table shows the conditions for which these examinations were made :—

BACTERIOLOGICAL EXAMINATIONS, 1913.

Condition	Bacteriological Laboratory	Elswhere	Total
Enteric Fever	124	—	124
Anthrax	24	—	24
Diphtheria	895	637	1532
Tuberculosis :			
Sputum	495	150	645
Milk	88	438	526
Urine	9	—	9
Milk (other Organisms) ..	25	261	286
Gonococci	17	—	17
Ringworm —	—	217	217
Other Examinations ..	2	—	2
Total ..	1679	1703	3382

VII.—HOUSING.

The estimated number of inhabited houses in Bradford at the end of 1913 was 72,008. The average number of persons per inhabited house was, at the census of 1911, 4·08, as against 4·36 at the census of 1901.

CLASSIFICATION OF BUILDINGS FROM CENSUS RETURN, 1911.

	1901 Total	Total buildings as dwellings	Ordinary dwelling houses	Blocks of Flats	Shops	Hotels, Inns, and Public Houses	Offices, Warehouses, Work- shops, and Factories,	Institutions	Others	Vessels, Sheds, Vagrants, etc.	Separate Flats included in "Blocks"
Number inhabited..	64147	70781	66826	16	3218	535	47	76	66	—	166
Separate Occupiers	64616	71481	67306	166	3241	537	47	79	75	29	166
Population	279767	288458	267774	440	12760	2784	200	4044	337	119	440
Uninhabited	3369	3568	3270	—	284	4	3	—	7	—	2
Being built ..	610	122	117	—	4	—	1	—	—	—	—

BUILDINGS NOT USED AS DWELLINGS.

Places of Worship	Government and Municipal Buildings	Shops	Offices	Warehouses, Workshops, and Factories.	Theatres and other places of amusement
264	70	2585	208	2013	11

The houses in Bradford in the occupation of private families at the census of 1911 is given in the Table on pages 94 and 95. It will there be noticed that the total population in private families at the time was 283,321, living in 71,272 private families. The number of houses overcrowded according to the standard of the census with more than two persons per room was 3,749, with a population of 26,367, of whom 8,758 were under ten years of age, living in them. The percentage of the population living in overcrowded houses was therefore 9.3.

The number of new houses built during the past ten years in each Ward and certified as fit for human habitation in accordance with the Bradford Waterworks and Improvement Act, 1871, is shown in the Table on page 97. It will be noticed that during the past eight years there has been a serious diminution in the number of new houses being built.

NEW BUILDINGS.

Table A shows that 349 new houses have been built during the year and certified as fit for habitation in accordance with the Bradford Waterworks and Improvement Act, 1875.

Showing number of New Buildings certified as fit for habitation in each of the Wards, and in the whole City, during the years 1904-1913.

WARDS.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.
Allerton	35	41	14	43	35	29	62	40	21	10
Bolton	1	33	5	14	7	32	55	15	10	13
Bradford Moor...	222	190	117	130	103	84	50	31	81	60
East	37	30	7	21	..	21	1	14	10	...
East Bowling	150	50	14	57	38	10	3	12	39	6
Eccleshill	104	53	59	33	33	17	46	23	25	31
Exchange ... ..	...	...	...	...	...	...	...	...	...	...
Great Horton	224	110	48	48	45	30	42	37	32	58
Heaton	104	77	102	88	62	29	23	11	34	38
Idle	41	40	19	9	12	6	13	21	10	32
Listerhills	32	2	...	5	..	...	...	...	...	...
Little Horton	161	63	83	15	22	42	16	4	4	7
Manningham	14	52	13	7	...	52	88	68	42	24
North	8	23	21	8	9	18	3	20	6	2
North Bierley East	65	71	21	41	19	17	4	8	8	...
North Bierley West	8	7	1	6	...	5	44	29	20	21
South	58	8	28	23	...	15	...	...	1	1
Thornton	43	3	3	...	1	...	1	3	...	1
Tong	21	47	19	9	6	17	26	35	15	20
West	2	...	...	...	...	1	114	...	2	...
West Bowling	128	157	81	80	94	51	35	25	33	25
CITY TOTAL	1458	1057	655	637	486	476	626	396	393	349

(A) MORTALITY AND HOUSING.

The housing conditions of all deaths during the year were investigated except in sixty-five cases when the deaths occurred in Public Institutions, &c., and the usual residence of the person could not be found. The results of the enquiry are shown on the following table when it will be noted that the death rate in one and two-roomed houses was about 25 per thousand, while the death rate in three-roomed houses was about 20. On the other hand the death rate in four-roomed houses was 12·4, and that in houses of more than four rooms 8·6 per thousand. The figures must of course be used with some reservation, as the rates are not corrected for difference of age and sex distribution, but the contrast is so striking that any correction for such differences of age and sex distribution would probably have little effect upon the general results.

DEATHS AND DEATH RATES ACCORDING TO SIZE OF HOUSE.

	Number of Rooms in House				
	1	2	3	4	Over 4
Number of Deaths ..	64	736	1482	777	983
Mortality rate per 1000	24·2	25·4	19·9	12·4	8·6

In endeavouring to interpret results such as these the whole onus of the high mortality rates in the smaller houses must not be placed upon the size of the house alone. The smallness of a very small house is an index in a large majority of cases of the lowness of the standard of living conditions, and the effect of such attendant circumstances in raising the death rate must be remembered. When the size of the house alone brings about unhealthy conditions it does so chiefly from the overcrowding which exists in it, and small houses are much more

apt to be overcrowded than large ones. Thus at the Census of 1911 the percentages in Bradford of overcrowded houses in one, two, three, and four-roomed houses were respectively 15·1, 15·2, 7·8, and 2·7, while in the houses of more than four rooms only 0·4 per cent were overcrowded. From these figures the very high degree of overcrowding in the one and two-roomed houses will be appreciated. The relationship of the average number of occupants in houses where deaths occurred with that in all the houses of the same class in the City generally is seen in the following table where it will be noted that the average was higher in each case in the houses where deaths occurred.

DEATHS AND PERSONS PER OCCUPIED HOUSE.

Size of House	Houses in which deaths occurred			Total Houses in City	
	No. of deaths	Total No. of occupants at time of death, including deceased person	Average No. of occupants per house	Number	Average No. of occupants
1 room	64	155	2·41	1491	1·78
2 rooms	736	2704	3·67	9653	3·00
3 rooms	1482	6752	4·62	19690	3·77
4 rooms	777	3851	4·96	15170	4·14
Over 4 rooms . .	983	4920	5·00	25168	4·50

The Health Committee last year obtained further powers in the Bradford Corporation Act, 1913, to control overcrowding, but at the present time considerable practical difficulty is experienced in putting these powers into operation on account of the scarcity of available housing accommodation.

(B) INSPECTION OF DWELLING HOUSES.

During the year 1913 a considerable amount of work was done under the Housing, Town Planning, &c., Act, 1909, and the Regulations as to Inspections and Records issued by the Local Government Board. The following summary shows the number of houses dealt with under the Act :—

Number of dwelling-houses inspected under and for the purpose of Section 17 of the Housing, Town Planning, &c., Act, 1909	3082
---	----	----	----	----	----	----	----	------

Number of Dwelling-houses which on inspection were considered to be in a state so dangerous or injurious to health as to be unfit for human habitation	135
--	----	----	-----

Number of representations made to the Local Authority with a view to the making of Closing Orders..	..	135
---	----	-----

Number of Closing Orders actually made :—

Housing, Town Planning, &c., Act	..	..	..	5
Local Act	..	..	..	130

Number of dwelling-houses the defects in which were remedied without the making of Closing Orders	..	1172
---	----	------

Number of dwelling-houses which after the making of Closing Orders were put into a fit state for human habitation	44
---	----	----	----	----	----	----	----	----

General character of defects found to exist :—General dilapidations and want of repairs.

Number of dwelling-houses in which repairs are on hand..	215
--	-----

The following are the houses represented as unfit for human habitation with respect to which Closing Orders were made under the Housing, Town Planning, &c., Act, 1909.

BECK STREET—8, 10.

CUTLER HEIGHTS LANE—159, 161, 163.

The following houses were dealt with under the Bradford Gas and Improvement Act, 1871, as houses unfit for habitation and closed by order of the Council :—

ABBAY STREET—12, 14.

ABRAM GATE—50.

ACRE STREET—8, 10.

ADELAIDE STREET—49.

ARTHUR STREET—16.

BACK EBENEZER STREET—17, 19.

BACK HALL STREET—68A.

BACK REGENT STREET—14, 16, 17, 18, 19.

BANNER STREET—9, 11, 11A, 15.

BOLTON ROAD—32, 34, 36, 38.

CROSS FREDERICK STREET—7.

DIAMOND STREET—32, 34.

DIXON STREET—1, 2, 3, 4, 5, 20.

DUNCAN STREET—48, 51, 53, 55, 59, 63, 64A, 65, 67, 71, 79, 80,
82, 84, 85, 87, 91.

EASTBROOK LANE—2, 23, 25, 45, 47, 59, 65, 65A.

EBENEZER STREET—4, 8, 10.

FREDERICK STREET—25, 27, 29, 31, 33, 35, 39, 43, 45.

GEORGE STREET—47, 82, 88, 90, 92, 94, 96, 100, 102, 112, 118,
120, 124, 132.

GREAT CROSS STREET—12, 14, 16, 53, 55, 57, 59.

JER LANE—5.

KING STREET—29, 33, 35, 41.

LOOM STREET—12, 19, 21, 23.

LUMBY STREET—6.

MOUNT STREET—156.

MYRTLE STREET—118.

NATHAN STREET—1, 3, 5, 17.

NORTHBROOK STREET—37, 39.

REGENT STREET—29, 31, 33.

ROOLEY LANE—152, 154, 160, 162, 164, 166.

SHAW STREET—2, 4, 6, 8, 10, 12.

UPPER STURGES STREET—22.

WAPPING ROAD—47, 49, 55, 57, 65, 67.

The two Inspectors appointed under the Housing Regulations made 3,082 inspections with records of houses, the early inspection of which was, in the opinion of the Medical Officer of Health, desirable.

VIII. OCCUPATIONS IN BRADFORD.

The chief occupations of the inhabitants of Bradford are shown in the following table compiled from the census returns of 1911.

OCCUPATIONS OF PERSONS OVER 10 YEARS OF AGE.

Occupation	Males	Females	Total
Professional	2603	2180	4783
Commercial	6563	1023	7586
Domestic	1196	7487	8683
Conveyance	9940	232	10172
Building, &c.	6837	—	6837
Metals, &c.	9239	299	9538
Wood, &c.	2378	215	2593
Paper Printing, &c. ..	1934	1343	3277
Textile Manufacture, &c.	33786	36457	70243
Dress.. ..	2958	4767	7725
Food, &c.	6728	3713	10441
Others	13554	1317	14871
Retired, none specified ..	11830	72064	83894
Total	109546	131097	240643

EXPLANATORY NOTES:—

"Professional" includes those whose main occupations are religious, legal, medical, literary, scientific, educational, and the like.

"Commercial" includes merchants, agents, accountants, insurance agents, travellers, business clerks, and the like.

"Conveyance" includes railwaymen, tramwaymen, coachmen, motor drivers, carters, porters, messengers, and others.

"Metals, etc." include ironfounders, fitters, blacksmiths, tool makers, mechanics, and allied industries.

"Wood, etc.," includes cabinet makers and upholsterers.

"Food" includes tobacconists, spirit merchants, restaurant keepers, boarding house keepers and the like.

Further details of those engaged in Textile Manufacture, &c., the main industry of the City, is given in the following table:—

MANUFACTURE OF CERTAIN TEXTILE FABRICS.

Process				Males	Females	Total
WOOL AND WORSTED	{	Sorting	1936	—	1936	
		Carding and Combing ..	4570	2568	7138	
		Spinning	5497	13078	18575	
		Weaving	3261	13127	16388	
		Other processes	3496	531	4027	
		Undefined	655	317	972	
SILK ..	{	Spinning	269	1167	1436	
		Weaving	275	1167	1442	
		Other processes	492	206	698	
		Undefined	113	84	197	
COTTON ..	{	Card and Blowing Room	41	76	117	
		Spinning	214	504	718	
		Winding, Warping, &c.	441	345	786	
		Weaving	53	549	602	
		Other Processes	31	20	51	
		Undefined	31	20	51	
		Bleaching, Printing, Dyeing, &c.	6288	473	6761	
		Dealers, including Drapers	5090	882	5972	
		Total			32753	35114	67867

(A). OCCUPATIONS OF MARRIED WOMEN.

Of the 59,033 women engaged in occupations outside of their homes in Bradford, 11,242, or 19.0 per cent., were married. The chief occupations of these married women were in 998 cases domestic in character, in 7509 cases in the manufacture of textile fabrics, in 662 cases in dressmaking, shirt making, &c., and in 1324 in occupations concerned with food, &c.

Of the total married women in the City (57,765) therefore, 11,242, or 19.6 per cent., were engaged in occupation, and 7509, or 13.3 per cent., were engaged in work in the mills.

(B). OCCUPATIONS OF CHILDREN.

The total number of children under sixteen years engaged in some occupation in Bradford was at the time of the last census, 13,779.

CHILDREN EMPLOYED.

Age	Males	Females	Total
Under 13 years ..	1210	1112	2322
14 years	1355	1341	2696
15 years	2113	2126	4239
16 years	2182	2340	4522
Total ..	6860	6919	13779

The great proportion of these children were employed in the wool and worsted trade, chiefly in the spinning processes.

CHILDREN EMPLOYED IN WOOL AND SILK TRADE.

Process		Age								Total	
		Under 13		Under 14		Under 15		Under 16			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
WOOL AND WORSTED	Sorting ..	—	—	5	—	13	—	44	—	62	—
	Carding and Combing ..	1	3	11	8	32	24	66	57	110	92
	Spinning ..	921	1051	877	1156	524	1007	358	942	2680	4156
	Weaving ..	58	33	101	233	122	421	82	504	363	1191
	Other Processes..	9	2	45	18	69	16	92	10	215	46
SILK	Undefined ..	52	20	51	18	58	23	45	14	206	75
	Spinning ..	24	41	33	70	30	73	20	52	107	236
	Weaving ..	1	5	2	34	3	35	4	47	10	121
	Other Processes..	1	9	7	14	7	13	15	9	30	45
	Undefined ..	2	4	4	9	10	4	3	6	19	23
Total ..		1069	1168	1436	1560	868	1616	729	1641	3802	5985

Employment of Children Act, 1903. Special attention has again been paid by the Inspectors to the enforcement of the Bye-laws made under this Act for the regulation of the hours of children employed in the City. A large number of visits have been made to shops and other places where children are employed in the early morning, during the day, and at night, in all parts of the City. The provisions of the Bye-laws as they relate to the employment of children in various occupations before and after school hours, and as half-timers, have been carefully explained to all persons found to be employing children. The number of offences discovered during the year against the Bye-laws was 346, and in addition there were 20 offences against the general provisions of

the Act itself, making a total of 366, as compared with 178 in the previous year, 315 in 1911, 439 in 1910, 277 in 1909, 375 in 1908, and 724 in 1907. In thirty-two cases where the offence was repeated after warnings had been given, the employers were prosecuted and the remaining employers served with warning notices and supplied with printed copies of the Bye-laws.

The following is a summary of the offences committed :—

Children employed after 9 p.m. on Saturdays ..	16
Children employed after 8 p.m. on weekdays ..	37
Children employed before and after school for more than 20 hours in a week	24
Children employed as half-timers for more than 30 hours in a week	9
Children employed under eleven years of age ..	36
Children employed the whole of the day on Saturdays	92
Children employed both morning and evening ..	33
Children employed on Sundays	24
Children employed during school meal hours ..	22
Children employed after 8 a.m. and before 5 p.m. on week-days	40
Children employed after half-time in factories ..	17
Children employed so as to be liable to cause injury to health	3
Other offences	13
<hr/>	
Total	366

During the year 144 children were licensed by the Magistrates to take part in public entertainments at the various theatres and other

places of amusements. Visits were made in each case to see that the conditions of the license were carried out, and that the children were suitably cared for and educated. All the conditions were found to be satisfactory. Visits were also made to the places of entertainment at times when no licences were in operation, and on two occasions children were found to be taking part without having been licensed by the Magistrates, the employers of the children and the managers of the theatres were cautioned.

The following prosecutions were undertaken under the Employment of Children Act, 1903, and Bye-laws:—

- (a) For employing children after half-time in a factory 3 persons were proceeded against and fined in all 11s. and £1 4s. costs.
- (b) For breaches of the bye-laws 29 persons were proceeded against and fined in all £11 11s. and £11 3s. costs.

IX.—FOOD.

(A) MILK SUPPLY.

So far as can be estimated it would appear that the average quantity of milk consumed in the city daily amounts to about 14,500 gallons, of which about 9,000 gallons is produced within the city boundaries and about 5,500 gallons outside.

Inspection of Dairy Cattle. This is carried out regularly by the veterinary inspector who supplies the following report on his work during the year.

REPORT BY C. PITTS, M.R.C.V.S.

There are at present within the city 400 dairy farms, of which 327

are used as dairy farms, and seventy-three chiefly for rearing or keeping store cattle. All the farms were visited under the provisions of the Tuberculosis Order, 1913.

There are approximately 4,600 dairy cows within the city which contribute to the milk supply. At the beginning of the year 1913 the class of dairy cattle was below the usual standard quality owing no doubt to restrictions from foot and mouth disease, the wet season, and poor quality of fodder. Towards the close of the year the quality improved considerably and excelled all recent years. During the year 2,177 visits were made to farms to inspect dairy cattle and to maintain as far as possible cleanliness of the animal, their udders, and the milk. At this time also the cowsheds, dairies, can-houses, and milk vessels were all inspected, and the milk both before and after filtration examined. The number of inspections of dairy animals made during these visits was 28,680, particular attention being paid to the condition of the animals generally, the udder for tuberculous mastitis, or any other form of disease likely to cause contamination. Samples of milk from all udders exhibiting abnormal conditions were taken and from all animals which had recently calved where blood was likely to be found in the milk. The samples of milk collected during the year numbered 658. These have been examined by the microscope for pus, dirt, and tubercle bacilli, and in cases where doubt existed repeated samples were collected and examined. Many samples of milk which were taken direct from the udder when recently drawn appeared normal to the naked eye, but when allowed to sediment a deposit of pus cells were found at the bottom of the test tubes. In these cases a notice was sent to the owners informing them not to sell the milk containing the pus nor mix it with other milk and sell for human food. After this notice the Inspector of Food and Drugs intercepted the dairyman in his delivery of the milk and purchased samples, which were tested for pus and contaminations, and the result of the test determined further action.

Under the Bradford Corporation Act, 1900, Bradford possessed powers to take samples of the milk sold in the City for biological testing for tuberculosis, but as the interval was so great between the taking of the sample and the receipt of the result, great difficulty was usually found in tracing the source of infection, either inside or outside the city when a sample was reported against. Under the same Act powers were given to ensure isolation of diseased cows, but this did not prevent the owner of such an animal disposing of it after detection. The result was that diseased cows were frequently sold out of the city and despite all

efforts, both inside and outside of the city, were lost sight of. The Tuberculosis Order, 1913, which came into force on the 1st May greatly improved the procedure in dealing with tuberculosis in dairy cattle, and has effectually prevented such proceedings.

During the year four samples of mixed milk from sources beyond the city boundaries were found to contain tubercle bacilli. These are referred to on pages 115 and 116.

Between 1st January and 30th April, forty-four dairy animals were found in the city suffering from tuberculosis, in twelve of which the udder was affected. No less than eight of these twelve were sold to dealers and could not be further traced, while the other four were followed up until their slaughter. The remaining thirty-two animals were suffering from tuberculosis not affecting the udder. These animals were ultimately disposed of as follows :—twenty-six were slaughtered and six were sold to persons outside the city and lost sight of. Thus in the period in 1913 prior to the coming into force of the tuberculosis order, of forty-four animals which would have been dealt with under it, eighteen could not be traced, and probably in some cases continued to be used as dairy cows.

The number of animals reported under the provisions of the Tuberculosis Order from the 1st May to the 31st December, 1913, was fifty-seven, of which twenty-seven were said to be suffering from tuberculosis of the udder, and thirty from tuberculosis with emaciation. In four of these cases the reports were sent on to Inspectors of other local authorities, while the remaining fifty-three cases were dealt with as follows :—twenty-three were slaughtered and the post mortem showed the animal to be suffering from advanced tuberculosis and one quarter compensation paid ; one was slaughtered and the post mortem showed the animal to be suffering from tuberculosis, but not advanced, so three-quarters compensation was paid ; twenty-six were slaughtered by the owners and no compensation paid, while three were not slaughtered as repeated clinical and bacteriological examinations showed that the animals were not suffering from tuberculosis.

Upon many occasions the attention of cowkeepers has had to be called to the dirty state of the dairy cows in their possession, the hind quarters of the animals being encrusted with manure and the teats and udders being fouled. Where such conditions were found a visit has been

made at milking time, and the milk filtered in the presence of the person responsible and the result of such filtration shown to him. When necessary a warning is given that in future due diligence must be taken to prevent the contamination of milk before leaving the farm premises. A conviction was obtained against a dairyman for not exercising due diligence to prevent exposure of milk belonging to him to noxious contamination and uncleanness ; the penalty was 14s. and 7s. costs.

SUMMARY.

Number of Dairy Farms in the City	..	..	..	..	327
Number of Store Farms in the City	..	..	..	..	73
Approximate number of dairy animals	..	..	..	..	4600
Number of visits to farms	..	..	..	..	2177
Number of inspections of dairy cows	..	..	..	..	28,660
Number of samples of milk collected and examined	..	..	..	..	658

Number of animals found suffering from Tuberculosis :—

Before May 1st :—

Tuberculosis of the udder	..	..	..	..	12
Tuberculosis with emaciation	..	..	..	..	32

After May 1st :—

Tuberculosis of the udder	..	..	..	..	27
Tuberculosis with emaciation	..	..	..	..	30

Total	101
-------	----	----	----	----	-----

Compensation paid under the provisions of the Tuberculosis

Order, 1913	..	..	..	..	..	£53	5	0
Amount received as salvage	..	..	..	..	..	31	14	8
Net cost of compensation	..	..	..	..	..	£21	10	4
Amount to be refunded by the Board of Agriculture	..	..	..	..	..	10	15	2
Net cost to Local Authority	..	..	..	..	..	£10	15	2

Cowsheds. There were at the end of the year within the city 324 dairy farms, containing 609 cowsheds, which are regularly under inspection for the enforcement of regulations made under the Dairies, Cowsheds, and Milkshops Orders, 1885 and 1886. During the past year 2198 visits have been made to these premises, and 3,570 inspections of cowsheds.

Nineteen notices were served upon cowkeepers requiring them to carry out certain alterations or amendments necessary to put the cowsheds in their occupation in a sanitary condition.

Considerable improvement has been effected in the sanitary condition of these places during the past five years, and the work executed during the past twelve months at various farm premises is given below.

New Cowsheds (constructed under supervision of Surveyor's Department)	2
Cowsheds Reconstructed	21
Feeding Gangways Provided	21
Additional Light Secured	32
Proper Ventilation Provided	31
Additional Air Space	31
Drains Relaid or New Drainage Provided	34
Paving (repaired or renewed).. .. .	32
New Manure Pits Constructed	6
Manure Pits (ventilating into Cowsheds) Abolished	5
Walls Cemented (to facilitate cleansing)	30
New Dairies Provided	9
Cowsheds Abolished	8

The whole of these improvements, with the exception of new cowsheds, were personally supervised by the Inspector of Cowsheds.

Changes in the occupancy of farm premises are constantly taking place, and during the past twelve months fourteen persons have been registered as cowkeepers. During the past year the occupiers of three farms containing five cowsheds have discontinued keeping dairy cows.

On one occasion the Inspector found poultry in a cowshed ; these were at once removed at the request of the Inspector. Thirty-four cowkeepers having failed to limewash their cowsheds at the time stipulated in the regulations, notices were served upon them drawing their attention to this breach of the Orders, and in each case this had the desired effect. Five notices have been served upon cowkeepers requiring them to remove accumulations of manure from their manure pits, or to take such steps as were necessary to prevent the overflowing of manure tanks.

The water supply at two farms being considered unsatisfactory samples were taken and submitted to the City Analyst, who certified in both cases the water was suitable for domestic purposes.

DETAILED LIST OF IMPROVEMENTS IN COWSHEDS.

	New Cowsheds.	Cowsheds Reconstructed.	Gangways Provided.	Additional Light.	Ventilation Provided.	Air Space.	Drainage.	Paving.	New Manure Pits.	Manure Pit Abolished.	Walls Smoothed.	Dairies Provided.	Cowsheds Abolished.
Aldersley Farm, Allert'n	—	3	2	2	2	2	2	2	—	—	2	—	4
Haycliffe Hill Farm													
(Bates)	—	1	1	1	1	1	1	1	—	—	1	—	—
Bolton Hall Farm ..	—	1	1	3	3	2	3	3	1	1	3	—	—
495 Rooley Lane ..	—	1	1	1	1	1	1	1	—	—	1	—	1
Bank Farm, Eccleshill	—	—	—	2	2	2	2	2	1	1	2	—	—
Hoe Farm, Bolton ..	—	1	1	2	2	2	2	2	1	1	2	—	1
Low Fold Farm, Bolton	—	—	—	1	1	1	1	1	—	—	—	—	—
Low Newell Farm,													
Rooley Lane ..	1	—	—	—	—	—	—	—	—	—	—	—	—
Throstle Nest Farm,													
Fagley	—	1	1	1	1	1	1	1	1	—	1	—	—
Raikes Farm, Tong ..	—	1	1	1	1	1	1	1	—	—	1	1	—
Manorley Hall Farm,													
Buttershaw	—	1	1	1	1	1	1	1	—	—	1	—	—
Red Hill Farm, Tong	—	1	1	1	1	1	1	1	—	—	1	—	—
Springfield Farm,													
Lidget Green	—	1	1	2	2	2	2	2	—	—	—	—	—
Threapleton Farm,													
Wyke	1	—	—	—	—	—	—	—	1	1	—	—	2
Perseverance Farm,													
Thornton	—	—	—	—	—	—	1	—	—	—	1	—	—
Back Lane Farm, Idle	—	—	—	—	—	—	—	—	—	—	—	1	—
Cow Close Farm, Wyke	—	1	1	1	1	1	1	1	—	—	1	—	—
Northern Head Farm,													
Wyke	—	1	1	1	1	1	1	1	—	—	1	—	—
Reevy Hall Farm,													
Wibsey	—	2	2	2	2	2	2	2	—	—	2	—	—
Haycliffe Hill Farm,													
(Bacton)	—	1	1	1	1	1	1	1	—	—	1	1	—
Beckside Farm, Great													
Horton	—	1	2	2	2	2	2	2	1	1	2	—	—
Travis Farm, Thornton	—	1	1	1	1	1	1	1	—	—	1	—	—
Haycliffe Hill Farm													
(Hudson)	—	1	1	1	1	1	1	1	—	—	1	1	—
Black Carr Farm,													
Thornton	—	1	—	1	1	1	1	1	—	—	1	1	—
School Green Farm,													
Thornton	—	—	—	—	—	—	1	—	—	—	—	—	—
Cutler Heights Lane ..	—	—	—	3	3	3	3	3	—	—	3	—	—
Close Top Farm,													
Great Horton	—	—	1	1	1	1	1	1	—	—	1	—	—
Shay Fold Farm,													
Thornton	—	—	—	—	—	—	—	—	—	—	—	1	—
Watty Hall Farm,													
Wibsey	—	—	—	—	—	—	—	—	—	—	—	1	—
Mayfield Farm, Wyke	—	—	—	—	—	—	—	—	—	—	—	1	—
Low Fold Farm, Wyke	—	—	—	—	—	—	—	—	—	—	—	1	—
Totals ..	2	21	21	32	32	31	34	32	6	5	30	9	8

Milkshops, Dairies, and Purveyors of Milk. There were at the end of the year 420 vendors of milk registered and residing within the City. During the year thirty-nine new milk purveyors were registered.

These registered milk vendors may be classified as follows :—

Cowkeepers and retailers	..	..	..	..	141
Retailers only (in the streets or from their homes)	..				158
Milkshops (including dairies, confectioners, small grocers, restaurants, and other shops)	..			..	121

The number of visits made during the year to these premises was 820, and generally the premises were found in a fairly satisfactory state.

In addition to these 420 vendors residing in Bradford, 13 dairy-men came in from surrounding districts to sell milk, by retail, in the city.

Three milk purveyors were cautioned for selling milk from receptacles not conspicuously inscribed with their name and address. Each of them afterwards complied with the requirements.

The milk supply produced within the city is supplemented from 182 sources outside the boundary. From these sources the milk arrives in Bradford in 105 cases by rail, in 13 by tramways, and in 64 by road. The total amount of milk produced outside the city boundary and consumed within is estimated to be about 5,500 gallons daily.

Bacteriological Examination of Milk. In addition to the examinations of milk carried out by the Veterinary Inspector, forty-eight

samples of milk were obtained and submitted to the Leeds School of Medicine to be tested for tubercle bacilli by inoculation tests ; nine of these were reported to be tuberculous. The following details may be given with respect to the samples proving tuberculous :—

One sample (No. 168) was from a mixed milk taken in the streets and produced within the city, this source was traced to a tuberculous cow from which sample (No. 172) was taken ; the cow was isolated and was not further used for milk production. One sample (No. 177) was taken under the direction of the veterinary inspector from a case in which he suspected tuberculosis of the udder ; the cow was dealt with under the Tuberculosis Order, 1913. One sample (No. 182) was taken from a mixed milk coming by rail from outside the city. The cowshed was visited and a sample (No. 188) was taken under the directions of the veterinary inspector from a suspected cow and proved to be tuberculous. The circumstances were reported to the Rural Authority of the district. One sample (No. 184) was taken from a mixed milk coming by road from outside the city ; the cowshed was visited and the cows examined, but no suspicious udder was found. Several weeks had elapsed between the taking of the sample and the report, and during that period two cows had been sold to a dealer, but these could not be traced. One sample (No. 201) was from a mixed milk coming by rail from beyond the city boundary. The cowshed was visited by the veterinary inspector, and the cows examined, and a sample (No. 209) taken from a suspected udder, which was reported to be tuberculous. The Local Authority of the district was notified and the animal dealt with under the Tuberculosis Order, 1913. One sample (No. 213) was from a mixed milk coming by rail from beyond the city boundary. The cowshed was visited, and the cows were examined by the veterinary inspector, and a suspected udder was found. A sample taken in the current year proved to be tuberculous.

No bacteriological counts of milk were done during the year.

Chemical Examination of Milk. During the year 468 samples of milk were analysed by the City Analyst and the results are shown in tabular form on the following page. These show that 4.0 per cent. of the samples gave an analysis under 3 per cent. of fat, and 68.2 per cent. over 3.5 per cent. of fat, while 7.1 per cent. of these samples gave an analysis under 8.5 per cent. of non-fatty solids, and 61.8 per cent. over 9 per cent. non-fatty solids. The total number below 3.0 per cent. of fat and 8.5 per cent non-fatty solids was 38, or 8.1 per cent. of the samples.

RESULTS OF MILK ANALYSIS 1913.

118

Per cent.	Fat																			Total				
	Und'r 2'5	2'5	2'6	2'7	2'8	2'9	3'0	3'1	3'2	3'3	3'4	3'5	3'6	3'7	3'8	3'9	4'0	4'1	4'2		4'3	4'4	4'5	4'6 & over
Under 7'5	2	1	—	1	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	5
Over 7'5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7'6	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7'7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7'8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
7'9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'6	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'7	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'8	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
8'9	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'0	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'2	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'4	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'5	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
9'6 and over	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Total ..	2	2	1	3	4	7	20	19	21	36	34	38	37	47	44	30	28	27	23	13	10	7	15	468

Non-Fatty Solids.

Municipal Milk Depot. The business done at the Milk Depôt is shown in the following tabular statement:—

	1911-12	1912-13	1913-14
Humanized Milk sold (bottles)	312,351	119,539	5,875
Sterilized Milk sold (pints)	83,890	70,907	14,543
Raw Milk sold, wholesale and retail (galls.) ..	56,394	81,327	101,156
Sterilized Milk supplied to Hospitals (pints)	8,226	22,416	436
Raw Milk do. (galls.)	8,406	9,255	5,225

The Balance Sheet for the year ending March 31st, 1914, is appended.

COMPARATIVE STATEMENT OF REVENUE

EXPENDITURE.	1912-13.		1913-14.		Increase.	Decrease.
	Amount.	Per-centage of Total Income.	Amount.	Per-centage of Total Income.		
	£ s. d.		£ s. d.		£ s. d.	£ s. d.
Salary of Official ...	114 8 4	2'40	120 8 8	1'92	6 0 4	
Wages and Team Labour	520 17 11	10'92	768 7 10	12'29	247 9 11	
Rents, Rates, and Taxes	68 2 8	1'43	85 10 8	1'36	17 8 0	
Milk and Cream ...	3836 19 0	80'44	4287 1 0	68'56	450 2 0	
Sugar ...	6 8 0	'13	2 4 8	'03		4 3 4
Eggs ...	65 19 11	1'39	141 19 9	2'27	75 19 10	
General Repairs ...	191 17 10	4'02	507 2 7	8'11	315 4 9	
Bottles, Teats, Washers, &c. ...	71 18 11	1'51	55 15 3	'90		16 3 8
Coal, Coke, Gas, Elec- tricity, and Water }	42 13 0	'89	92 3 0	1'47	49 10 0	
Provender, Saddlery and Farriery ... }	150 19 11	3'17	141 5 6	2'26		9 14 5
Insurance ...	2 15 8	'06	2 4 5	'04		0 11 3
Printing, &c., Disburse- ments and Sundries }	126 1 10	2'64	186 5 2	2'98	60 3 4	
					1221 18 2	30 12 8
					30 12 8	
	5199 3 0	109'00	6390 8 6	102'19		
INCREASED EXPENDITURE ...					£ 1191 5 6	

F. OGDEN WHITELEY, F.S.A.A.,

City Treasurer and Accountant.

* NOTE.—In addition to the above, expenditure has been incurred in respect of the New Premises in course of erection in Morley Street, as follows:—

	£	s.	d.
Second Instalment ...	2500	0	0
Interest on Suspense Account...	155	0	0
	<u>£2655</u>	0	0

ILK DEPOT.

COUNTS FOR THE YEARS 1912-13 AND 1913-14.

INCOME.	1912-13.		1913-14.		Increase.	Decrease.
	Amount.	Per-centage of Total Expend-iture.	Amount.	Per-centage of Total Expend-iture.		
	£ s. d.		£ s. d.			£ s. d.
Milk—Humanized ...	38 6 6	'74	11 10 3	'17		26 16 3
„ Sterilized ...	416 6 7	8'01	139 2 5	2'18		277 4 2
„ Wholesale ...	2767 14 8	53'24	2681 15 5	41'98		85 19 3
Cream	39 2 4	'75	38 3 0	'60		0 19 4
Eggs	65 17 8	1'27	61 11 0	'96		4 6 8
Honey	0 6 2	'01				0 6 2
Butter			11 4 5	'17	11 4 5	
Bottles, Teats, &c. ...	1 18 5	'01	1 10 0	'02		0 8 5
Free Supply—						
Health Dept.—Milk ...	666 15 11	12'82	569 4 6	8'90		97 11 5
Infants' Con- } do. ...	765 5 3	14'73	2636 6 9	41'26	1871 1 6	
Do. Eggs ...	7 6 6	'14	103 3 10	1'62	95 17 4	
	4769 0 0	91'72	6253 11 7	97'86	1978 3 3	493 11 8
					493 11 8	
					1484 11 7	
Expenditure in excess } of Income	430 3 0		*136 16 11			
	5199 3 0		6390 8 6			
INCREASED INCOME					£ 1484 11 7	

MEM.—

Deficit, 1912-13	£ s. d.
	430 3 0
Increased Income, 1913-14	£ s. d.
„ Expenditure, 1913-14	1484 11 7
	1191 5 6
	293 6 1
	£136 16 11

(B) SALE OF FOOD AND DRUGS ACTS.

The number of samples of Food and Drugs taken under these Acts and submitted to the Public Analyst for analysis by the Food and Drugs Inspector was 839. Of these 769 were certified genuine and seventy as adulterated or doubtful.

In thirty-five cases the vendors were summoned before the Magistrates for adulteration of food and in one for refusal to sell; penalties and costs amounting to £79 6s. were inflicted.

Under special arrangement twenty-nine samples were submitted by traders and others for analysis; of these twenty-eight were certified genuine and one doubtful.

The following table shows the nature of articles submitted for analysis :—

SAMPLES TAKEN.

	Number submitted	Adulterated or Doubtful
Milk	489	51
Cream	21	5
Butter	65	—
Cheese	6	—
Bread and Butter ..	14	—
Margarine	12	—
Lard	47	—
Flour	27	3
Rice	12	—
Pepper ..	10	3
Jam	13	1
Other Articles of Food	49	5
Drugs	74	2
Total ..	839	70

The action taken is set out in the following table and text.

MILK.

Sample No.	Deficiency in Fat, per cent.	Added Water, per cent.	Other Adulteration	Fine	Costs	Remarks
				£ s. d.	£ s. d.	
5150	2.0	7.5	—	0 10 0	0 7 0	
5167	—	6.3	—	1 0 0	0 7 0	
5189	—	31.2	—	2 0 0	0 7 0	Separated milk.
5249	7.0	—	—	—	—	Dismissed
5282	—	4.7	—	1 0 0	0 7 0	
5400	10.7	10.1	—	5 0 0	—	Including costs
5405	4.0	6.8	—	5 0 0	—	Do.
5407	5.3	2.3	—	0 10 0	—	Do.
5417	5.7	4.0	—	0 10 0	—	Do.
5483	—	—	10.7 parts per million of dry dirt	2 0 0	0 7 0	
5570	26.0	22.3	—	4 11 0	0 9 0	
5576	—	25.6	—	4 13 0	0 7 0	
5583	7.0	21.5	—	4 13 0	0 7 0	
5590	—	7.7	—	2 0 0	0 7 0	
5609	—	5.0	—	1 0 0	0 7 0	Separated milk.
5790	—	75.0	—	10 0 0	0 14 0	
5908	4.0	6.8	—	—	—	Withdrawn
5915	—	13.8	—	2 0 0	0 7 0	
5918	—	10.3	—	2 0 0	0 7 0	
5951	—	8.7	—	5 0 0	1 15 0	

NOTES:—Samples 5150, 5167, and 5282 were from the same cowkeeper. The cowshed was visited and a sample taken from the mixed milk of a herd of fourteen cows six days after the last sample was taken. The result was: Total solids, 13.40; non-fatty solids, 9.08, and milk fat, 4.32. Samples 5400, 5405, 5407, and 5417 were from a cowkeeper in the city supplying a milk purveyor in the city, and were all taken at the place of delivery. The cowshed was visited after-

wards and a sample of mixed milk taken from a herd of six cows. The result was: Total solids, 13·0; non-fatty solids, 9·14; milk fat, 3·86. The man was fined £1 and 11s. costs in 1910 for an 8 per cent. deficiency in milk fat. Samples 5570, 5576, and 5583 were from the same cowkeeper and were taken at the place of delivery to the milk purveyor. The milk purveyor from whom sample 5590 was obtained was also fined £1 and 7s. costs for refusing to sell from another can of milk in his cart.

In the following cases the sample was either taken unofficially or a caution was given by the Committee, viz.: samples showing 7·0 and 3·7 per cent. deficiency in fat, samples showing 3·0, 1·4, 3·5, 1·0, 4·2, 1·1, 0·47, 0·9, 1·18, 4·0, and 0·43 per cent. added water; sample showing 4·7 per cent. deficiency in fat and 0·4 per cent. added water, sample showing 2 per cent. deficiency in fat and 0·9 per cent. added water, sample showing 14 per cent. deficiency in fat and 1·1 per cent. added water, and sample showing $2\frac{1}{2}$ pints per million of dry dirt.

The cases where preservative was found in milk are dealt with on pages 000.

CREAM. Twenty-one samples were taken, and five samples reported against under Milk and Cream Regulations, see pages 127—129.

FLOUR. Twenty-seven samples were taken, and three samples reported against as follows:—One sample gave off an odour of carbolic acid which was probably caused by being stored in close proximity to articles containing carbolic acid; the vendor was cautioned. Two samples were labelled “Health Flours” but were really cake flours containing 85 per cent. of potato farina with 15 per cent of wheat flour. An arrangement was made with the proprietors to discontinue the use of the word “Health.”

PEPPER. Ten samples were taken, and three samples reported against as follows:—One unofficial sample contained 9 per cent. of pepper husks, which was followed by two official samples; both samples contained 6 per cent. of pepper husks. The vendor was proceeded against and fined £1 10s., and 14s. costs.

JAM. Thirteen samples were taken, of which one unofficial sample contained $2\frac{1}{10}$ grains per lb. of benzoic acid; further samples were taken and found to be genuine.

COFFEE. Five Samples were taken and two were reported against as follows:—Each sample contained 75 per cent. of chicory and were from a shop in a poor district selling small quantities ; one was an official sample, the vendor being proceeded against and fined 6s. and 9s. costs, the other was an unofficial sample.

VINEGAR. Three samples were taken, and two samples were reported against as follows:—One sample contained only 69·5 per cent. of minimum amount of acetic acid, the vendor was proceeded against and fined £1 10s. inclusive of costs. One sample contained 80 per cent. of artificial vinegar, the vendor was proceeded against, and the case dismissed on payment of 3s. costs.

HONEY. Three samples were taken and one sample was reported as containing a small quantity of invert sugar.

OTHER FOODS. The following are the samples of other foods taken and certified genuine:—Forty-seven lard, sixty-five butter, fourteen bread and butter, six cheese, twelve rice, twelve margarine, one tea, one coffee and chicory, one sugar, one mustard, one tinned crab, two fish fryers' fat, one yeast, one sage, one pearl barley, six beer, two corn-flour, six sausages, seven aerated waters, one arrowroot, one oatmeal, one dark treacle, one golden syrup, one fruit wine.

DRUGS. AMMONIATED TINCTURE OF QUININE. Four samples were taken, and two samples were reported against as follows:—Each sample contained only 70 per cent. of solution of aninonia required by the British Pharmacopœia. The vendor was proceeded against, and the cases were withdrawn on payment of £1 1s. costs.

OTHER DRUGS. The following are the samples of other drugs taken

and certified genuine :—Three cod liver oil, two castor oil, four glycerine, three compound liquorice powder, three milk of sulphur, four olive oil, two sal volatile, two soap liniment, three tincture of iodine, two zinc ointment, three Gregory powder, four ground ginger, four camphorated oil, two turpentine, two flowers of sulphur, three citric acid, one boracic acid ointment, two iron and quinine citr., four tartaric acid, two resin ointment, two borax, three cream of tartar, three baking powder, one Seidlitz powder, one lime water, two prescriptions, one borax and honey, one quinine, one paregoric.

(C) MILK AND CREAM REGULATIONS, 1912.

The following statement shows the details of the work done under these regulations :—

(1) *Samples Examined :*

	(a) No. of Samples examined for the presence of a preservative	(b) No. in which a preservative was reported to be present
Milk	489	9
Cream	6	4

(2) *Cream Sold as Preserved Cream :*

(a) Instances in which samples have been submitted for analysis to ascertain if the statements on the label as to preservatives were correct :—

(i.) Correct statements made..	15
(ii.) Statements incorrect ..	—
Total ..	15

(b) Determinations made of milk fat in cream sold as preserved cream :—

(i.) Above 35 per cent. ..	14
(ii.) Below 35 per cent. ..	1
Total ..	15

(c) Instances where (apart from analysis) the requirements as to labelling or declaration of preserved cream in Article V. (1) and the proviso in Article V. (2) of the Regulations have not been observed. There were found sixteen cafés, restaurants, etc., at the beginning of the year selling preserved cream for consumption in the premises but not displaying the required notice. A circular letter was sent to proprietors and managers of all cafés, &c., warning them of the Regulations.

(3) *Thickening Substances* : None.

(4) *Action taken by the Council* :

MILK. (i.) Sample containing $\frac{3}{4}$ grain per pint of boric acid. The vendor appeared before the Health Committee and was cautioned. (ii.) Sample containing $1\frac{1}{4}$ grain per pint of boric acid. The vendor obtained the milk from the dairy from which the next two samples were obtained. The Health Committee decided to take no proceedings. (iii.) Samples containing $1\frac{1}{5}$ and $1\frac{1}{5}$ grains per pint respectively of boric acid. (iv.) These are the two samples just referred to and were from a dairy in the South of England. Proceedings were instituted and afterwards withdrawn on the Health Committee's instructions and on the payment of five guineas costs. (v., vi., and vii.) Samples containing .0428, .061 and .14 respectively grains per pint of formic aldehyde. These three samples were from one dairyman and taken on different dates. Proceedings were taken and the vendor fined 12s. 6d. and 34s. costs. (viii.) Samples containing .7 grains per pint of formic aldehyde. Proceedings taken; conviction obtained, £2 fine and 28s. costs. (ix.) Sample containing .5 grain per pint of formic aldehyde, proceedings were instituted and the case was dismissed on payment of 3s. costs. The same defendants were fined at the same time £5 and 35s. costs for 8.7 per cent. of added water.

CREAM (i. ii., and iii.). Samples containing .29 boric acid and 50.3 fat per cent., and .067 boric acid and 19.1 fat per cent.,

and .1 boric acid, and 13.3 fat per cent. These three samples were from the same café, which neglected to publicly notify after warning. Proceedings were taken against the first two (official samples) and 1s. fine and 17s. 6d. costs imposed. (iv.) Sample containing .007 boric acid and 40.0 fat per cent. No proceedings were taken. The café proprietor now publicly notifies the cream to be "preserved" cream.

(D) SLAUGHTERHOUSES AND MEAT INSPECTION.

There are in Bradford two public slaughterhouses, 42 private slaughterhouses, and one knacker's yard.

The private slaughterhouses are in 28 cases registered slaughterhouses, and in 14 cases subject to annual license. The knacker's yard is a licensed slaughterhouse.

Two meat Inspectors are engaged whole time in the work of meat and slaughterhouse inspection.

The inspectors visit several times daily the public abattoirs so that all meat prepared there for sale is subjected to inspection. The number of visits to private slaughterhouses made last year was 2,328, or an average of rather over one to each per week. Generally the private slaughterhouses have been found clean and satisfactory and no suspicion has arisen of unsound meat being prepared in them, but the work of maintaining an effective supervision of private slaughterhouses is laborious and unsatisfactory.

The number of carcasses condemned wholly or partly during the year was 1,195. These were as follows:—

CARCASSES WHOLLY OR PARTLY CONDEMNED.

	Wholly	Partly	Total
Cows	78	409	487
Hiefers	17	73	90
Bullocks	5	27	32
Calves	41	19	60
Sheep	84	66	150
Pigs	215	161	376
Total	440	755	1195

The total weight of meat found unwholesome or unsound and destroyed was made up as follows:—

WEIGHT IN LBS.

Beef	52,020
Veal	2,317
Mutton	5,572
Pork	37,232
Offal	29,120
=Total	126,261 lbs.
56 Tons, 7 cwts., 37 lbs.	

The total number of animals slaughtered in the public abattoirs is shown in the following table :—

NUMBER OF ANIMALS SLAUGHTERED AT PUBLIC ABATTOIRS.

	St. James's	Bolton Lane	Total
Beasts ..	11982	2252	14234
Sheep ..	22873	6922	29795
Lambs ..	4670	1586	6256
Calves ..	3800	1040	4840
Pigs ..	11350	6019	17369
	54675	17819	72494

Of these animals 433 beasts and 204 pigs were found tuberculous, the extent and incidence of the disease is shown in the following table :—

TUBERCULOUS CARCASSES AT PUBLIC ABATTIORS.

	Beasts		Pigs	
	No.	Per cent.	No.	Per cent.
Wholly destroyed	56	0·39	97	0·56
Partially destroyed	34	0·24	22	0·13
Internal organs only destroyed	343	2·45	85	0·49
Total	433	3·08	204	1·18

The meat sold in the markets and shops has been under frequent inspection and the meat at the Fever Hospital, Union, and School Canteen, has been examined periodically and found according to contract.

During the year 887 visits were made by the Inspectors on Sunday morning to butchers' shops open on that day, but no unsaleable meat was discovered. The number of visits in 1913 to premises where sausages and potted meat are prepared was 3,155, the premises were generally found satisfactory.

Under the Public Health Act, 1875, a provision merchant was fined £2 and 13s. costs for exposing for sale, bacon which was unfit for human food.

(E) OTHER ARTICLES OF FOOD.

One special Inspector is employed in the inspection of fish, game, poultry, fruit, and vegetables. The Inspector visits daily St. James's Wholesale Market and Rawson Place Retail Market. During the year he paid 741 visits to retail fish, game, and poultry dealers' premises, and 219 visits to fish curing yards, all of which were found clean and satisfactory.

The total quantity of fish, game, poultry, and fruit found unsound during 1913 and destroyed was 35 tons, 6 cwts., 69 lbs. This is shown in the following table :—

	No.	Weight destroyed		
		Tons	cwts.	lbs.
Fish	—	4	16	89
Shell fish	—	7	6	28
Rabbits	3066	3	8	—
Poultry and Game	75	—	5	3
Fruit and Vegetables	—	19	4	43
Sundries	—	—	6	18
Total	3141	35	6	69

In addition also 1,800 eggs were condemned and destroyed by the Food Inspector.

In the great majority of cases when these articles of food were condemned the circumstances did not warrant proceedings, but in the following, prosecutions were undertaken.

In one case 11 bloaters, 21 kippers, and 7lbs. codfish were seized at a retail shop on a Sunday morning as putrid. The defendant had been warned several times previously and was fined £2 and 7s. costs.

In another case 62 pieces of haddock in a very bad state were seized at a fried fish shop on a Sunday night. The defendant was fined 10s. and 7s. costs.

In one case 168lbs. gooseberries were seized at a wholesale dealer's. The gooseberries were affected with American Mildew and the consignors were prosecuted and fined each 10s. and 11s. costs.

In one case proceedings were undertaken under Public Health Acts Amendment Act, 1890, Section 28, with respect to 171lbs. black currants and a fine of 13s. and 7s. costs was imposed.

Ice Cream. The special food Inspector also undertakes the inspection of premises where ice cream is prepared and during the year paid 631 visits to these places. Generally the premises have been found to show considerable improvement under his continuous supervision, but great difficulty has been found in getting to know all the places where ice cream is prepared as there is no system of registration provided. In three cases where it was found that ice cream was being made in unsuitable premises under very foul conditions, prosecutions were instituted against the manufacturers and fines, amounting to 22s. 6d. and costs of 21s. were imposed. These fines considering the nature of the offences, may be considered small.

Bakehouses. The work done in the inspection of bakehouses is shown on pages 134—140.

X. WORKSHOP AND SHOPS INSPECTION, &c.

(A) FACTORY AND WORKSHOP ACT, 1901.

The total number of workshops on the register is 2,439, and of bakehouses 483, as compared with 2,537 and 505 respectively at the end of 1912.

Two Inspectors are engaged almost wholly on workshop and shop inspection and they are assisted by one of the women inspectors and by the district sanitary inspectors. The number of visits paid in 1913 to workshops was 2,659, and to bakehouses 784. During this time also, 327 visits were made to factories. At these inspections special attention is paid to the cleanliness, ventilation, air space, closet accommodation, and general sanitary condition of these places, as required by the Public Health Acts and the Factory and Workshops Acts.

Fourteen employers were found who had failed to keep on their premises a list shewing the names and addresses of all persons employed by them outside such premises, as required by the Factory and Workshop Act, 1901. In one case a prosecution was instituted and the remainder were warned.

Two hundred and twelve employers who had failed to send in on the 1st of February and the 1st of August a list of outworkers employed by them as required by the Factory and Workshop Act, 1901, were warned and allowed one month's grace in each case, with the result that 203 lists were duly received within that period. In the remaining 9 instances the employers were prosecuted.

Two hundred and twenty-nine visits of inspections were made to outworkers' premises, in the course of which 30 sanitary defects were found to exist. These have since been remedied.

The following is a summary of the sanitary and other defects found to exist in workshops, workplaces, and bakehouses ; with slight exceptions the defects have all been remedied.

Particulars.	Number of cases.
Workshops without Abstract of the Factory and Workshop Act. (Notified to H.M. Inspector of Factories)	101

Particulars.	Number of cases.
Dirty workshops limewashed and cleansed.. ..	168
Dirty bakehouses limewashed and cleansed	118
Workshops without separate closet accommodation for the sexes	29
Workshops with insufficient closet accommodation	11
Workshops with foul or defective w.c.'s or privies	186
Workshops where additional ventilation was required	21
Workshops which were overcrowded	9
Gas stoves without provision for carrying off fumes	10
Baking underground without a certificate	3
Various other nuisances remedied	8
Total	664

In the official tables on pages 137—140 will be found a statement of the work done under the Factory and Workshop Act, 1901.

The following prosecutions were undertaken during the year :—

- (a) For failing to send in the list of outworkers 9 persons were prosecuted and fined in all £2 and £2 19s. costs.
- (b) For failing to keep a list of outworkers one person was fined 1s. and 9s. costs.
- (c) For failing to limewash a bakehouse one case was dismissed on payment of 3s. costs.

FACTORIES, WORKSHOPS, LAUNDRIES, WORKPLACES AND HOMEWORK.

I.—INSPECTION.

INCLUDING INSPECTIONS MADE BY SANITARY INSPECTORS OR
INSPECTORS OF NUISANCES.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions.
<p>Factories (Including Factory Laundries)</p>	327	97	—
<p>Workshops (Including Workshop Laundries)</p>	3443	181	1
<p>Workplaces (Other than Outworkers' premises in- cluded in part 3 of this Report)</p>			
TOTAL	3770	278	1

II.—DEFECTS FOUND.

Particulars.	Number of Defects.			Number of Prosecutions.
	Found.	Remedied.	Referred to H.M. Inspector.	
<i>Nuisances under the Public Health Acts—</i>				
Want of cleanliness	244	244	...	...
Want of ventilation	27	27	...	...
Overcrowding	9	9	...	...
Want of drainage of floors	23	23	...	...
Other nuisances	478	477	...	...
* Sanitary accommodation {	insufficient	45	42	...
	unsuitable or defective	259	252	...
	not separate for sexes	53	51	...
<i>Offences under the Factory and Workshop Act—</i>				
Illegal occupation of underground bake-house (S. 101)	3	3	...	...
Breach of special sanitary requirements for bakehouses (SS. 97 to 100) ...	118	118	...	1
Other offences (Excluding offences relating to out-work which are included in part 3 of this Report).	...	...	...	...
TOTAL	1259	1246	...	1

* Sec. 22 of the Public Health Acts Amendment Act, 1890, adopted.

III.—HOMEWORK.

OUTWORKERS' LIST, SECTION 107.										
NATURE OF WORK.	List received from Employers.						Prosecutions.			
	Sending twice in the year.			Sending once in the year.			Notices served on Occupiers as to keeping or sending lists.	Failing to keep or permit inspection of lists.	Failing to send lists.	
	Outworkers.		I lists.	Outworkers.		Con-tractors.				Work-men.
	Lists.	Con-tractors.		Work-men.						
WEARING APPAREL—										
(1) Making, &c. ...	266	181	541	14	2	15	202	1	9	
(2) Cleaning and Washing Furniture and Upholstery ...	...	11	...	...	...	...	...	...	...
Umbrellas, &c. ...	20	73	39	...	...	...	18	...	...
Basket making ...	8	9	10	...	...	...	4	...	...
Brush making ...	...	...	...	...	...	...	...	...	...
Electro Plate ...	...	...	...	...	...	...	...	...	...
Cart Gear ...	2	12	...	...	...	...	2	...	...
Locks, Latches and Keys ...	...	...	...	...	...	...	...	...	...
Curtains and Furniture Hangings ...	2	8	4	...	...	...	...	...	...
Household Linen ...	...	...	...	...	...	...	...	...	...
Paper, etc., Boxes, Paper Bags ...	...	...	4	...	...	...	...	...	...
	2	...	4	...	...	...	...	...	...
TOTAL ...	300	294	602	14	2	15	226	1	9	

IV.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.							Number.
Important classes of workshops, such as workshop bakehouses, may be enumerated here.	Workshops	...	...	...	...	...	2439
	Bakehouses	...	...	...	...	...	483
	Total number of workshops on Register						2922

V.—OTHER MATTERS.

Class.	Number.
Matters notified to H.M. Inspector of Factories :—	
Failure to affix Abstract of the Factory and Workshop Act (S. 133)	101
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory and Workshop Act (S. 5)	Notified by H.M. Inspector 23 Reports (of action taken) sent to H.M. Inspector. 41
Other	
Underground Bakehouses (S. 101) :—	5
Certificates granted during the year	1
In use at the end of the year	45

(B) SHOPS ACTS, 1912 and 1913.

The number of visits and investigations made where young persons are employed was 3,749. In 190 shops the employers had failed to exhibit the notice referring to the provisions of the Act and stating the number of hours during which young persons may be employed. Two of these employers who had previously been cautioned for similar offences were prosecuted and the remainder cautioned. Eight young persons were found employed in shops after having been previously on

the same day employed in a factory or workshop for the full number of hours permitted by the Factory and Workshop Act. In one case the employer was prosecuted, and the remainder warned that a repetition of the offence would involve prosecution.

Special visits were made to 435 shops where female assistants are employed and enquiries made as to compliance with the provisions of the Shops Act. In all cases it was found that the seats were provided.

A large number of day and night observations have been made of shops to see if the provisions relating to the weekly half-holiday were carried out. In 169 cases it was found that no notice had been fixed specifying the day chosen by the shopkeeper as the day fixed for the closing of the shop on the weekly half-holiday; 358 shops were found open and the occupiers not displaying the mixed trades notices specifying the exempted trades for which they were remaining open after the hour of closing on the weekly half-holiday. With one exception the whole of these shopkeepers were warned that a repetition of the offence would involve them in legal proceedings. Two hundred and twenty-one shops were found open and the occupiers selling non-exempted articles, in 31 cases proceedings were taken against the offenders and the remainder were warned.

Ninety hawkers were found selling goods in the street after the hour of closing on the day fixed for the weekly half-holiday. In twenty-four cases where the offence was repeated after warnings had been given, the offenders were prosecuted.

In 257 cases it was found that the employer had failed to provide the prescribed form relating to their assistant's weekly half-holiday, but

upon this being pointed out to the persons concerned the form was in each case immediately provided. It was also found that in 24 cases shop assistants were employed on the day fixed for their weekly half-holiday after the hour of 1.30 p.m., and in 5 cases proceedings in the City Court were instituted and the responsible persons fined.

Considerable difficulty has again been experienced in the administration of the section of the Act relating to meal times, and 49 cases were found where assistants were not having the correct intervals for meals prescribed by the Act. Two cases were taken into Court, but the Stipendiary Magistrate dismissed them both, these cases thus sharing the same fate, which the 6 cases taken last year met with.

Closing and Exemption Orders. Visits have been specially made by day and night after closing hours to butchers' shops and hairdressers' shops in connection with the respective closing orders. Numerous observations were made, and 5 were found open in contravention of the orders. Twenty-four were also found to be not displaying their official copies of the closing orders, but as these were all first offences, the occupiers were cautioned.

During the year a petition signed by the necessary majority of monumental masons, was presented to the Local Authority asking for that class of trade to be exempt from the provisions of the Shops Act, as to the closing of their shops on a weekly half-holiday, and upon the petitioners signatures being verified it was found that the necessary majority had been obtained, your Committee therefore granted the exemption order applied for.

During the month of August a petition was received from the bakers

and confectioners, asking the Council to make a weekly half-holiday order for that trade, the Inspector verified the signatures and ascertained that the two-thirds majority, required by the Act, had been obtained with the result that the Order was made by the Council at their October meeting. Since then, however, much opposition has been raised against the Order, and the Secretary of State has intimated that he cannot approve it, as there now appears to be more than a third of the shopkeepers affected against the Order.

Prosecutions.

- (a) For failing to affix abstract relating to young persons 2 shopkeepers were proceeded against and fined 9s. and £1 1s. costs.
- (b) For failing to observe the weekly half-holiday 31 persons were proceeded against and fines amounting to £14 8s. and £8 17s. costs were imposed.
- (c) Proceedings were instituted against 24 hawkers for hawking on the weekly half-holiday and fines of 18s. 8d. and £3 17s. costs were imposed.
- (d) For breaches of the assistants' weekly half-holiday 5 persons were proceeded against and fined £1 5s. and £1 18s. costs.
- (e) For employing young persons after employment in a factory one case was dismissed on payment of 7s. costs.
- (f) A case against a shopkeeper for failing to exhibit mixed trades notices was withdrawn.
- (g) In two cases of breach of assistants' meal times the complaints were dismissed.

(C) THE RAG FLOCK ACT, 1911.

During the year 47 samples of flock were obtained and submitted to the City Analyst for analysis, 13 of which were found not to conform to the standard prescribed by the Local Government Board Regulations. Proceedings were instituted in 4 cases, particulars of which are enumerated below. In the 9 remaining cases the owners of the flock were warned by letter from the Town Clerk.

- (a) Sample of flock used for making bedding, contained 53·9 parts of soluble chlorine as chlorides per 100,000. Resulted in a fine of 11s. and 9s. costs.
- (b) Sample of flock used for making bedding, contained 70·92 parts of soluble chlorine as chlorides per 100,000. Resulted in a fine of £2 and 9s. costs.
- (c) Sample of flock used for making bedding, contained 51·06 parts of soluble chlorine as chlorides per 100,000. Resulted in case being dismissed on payment of costs of £2 2s.
- (d) Sample of flock used for making bedding, contained 35·46 parts of soluble chlorine as chlorides per 100,000. Resulted in defendant paying £2 2s. costs.

XI.—CLOSET ACCOMMODATION.

It is very difficult to state even approximately the number and character of the sanitary conveniences provided for the houses in Bradford. The following figures compiled from a census taken by the Inspectors in 1906 and brought up to date by the known conversions are given with great reservation. The time has again come when a full and accurate census should be taken so that the Local Authority may have a correct estimate of the present position.

SANITARY ACCOMMODATION AT THE END OF 1913.

(i.) Dwelling Houses.

	No. of Houses	Water Closets	Waste Water Closets	Privies
WATER CLOSETS.				
More than one sanitary convenience to each house ..	5090	7722	568	2319
One to each House	28108	28108	—	—
Less than one to each house	14037	7478	—	—
WASTE WATER CLOSETS.				
One to each house	7303	—	7303	—
Less than one to each house	260	—	131	—
PRIVIES.				
One to each house	10094	—	—	10094
Less than one to each house	9700	—	—	4569
Totals	74592	43308	8002	16982

SUMMARY.

	Number	Percentage
Houses with water closets	47235	63
Houses with waste water closets	7563	11
Houses with privies only	19794	26

(ii.) Business and Other Premises.

	No. of Premises	Water Closets	Waste Water Closets	Privies
Factories, workshops, and other business premises ..	4150	9741	—	489
Place of worship, schools, public institutions, &c. ..	446	2824	—	288
Total	4596	12565	—	777

(iii.) Totals.

Number of water closets	55873	
„ waste water closets	8002	
„ privies	17759	
	—————	81634
Number of middens	10788	
„ dry ashpits	27658	
„ dust bins	6020	
	—————	44466

It will be noticed that 14,037 houses with water closets and 9,700 houses with privies have less than one sanitary convenience to each house. It therefore happens that more than in a quarter of the houses in Bradford the standard of sufficiency of sanitary accommodation is very low.

For some years past the local authority have been actively engaged in pushing forward the whole of conversion of all the privies in the City.

This is carried out under the provisions of Section 21 of the Bradford Improvement Act, 1873, which states:—

In addition to all powers vested in the Corporation the Corporation may in any case where a dwelling-house within the borough shall be without a privy water closet or earth closet or an ashpit or without a privy water closet or earth closet or an ashpit of a construction and size approved by the Corporation require the owner of such house by notice under the hand of the Mayor or Town Clerk for the time being to provide such a privy water closet or earth closet or such an ashpit or to make such preparation or alteration of the existing privy water closet or earth closet or ashpit as in such notice shall be stated and within a period to be therein mentioned. If such owner shall neglect to comply with such notice within the time therein appointed he shall for every such offence forfeit a sum not exceeding Five pounds and a further penalty not exceeding the like sum for every day during which such offence shall continue.

The conversions which took place during the past year under this Section affected 4,024 houses of which 2,193 had middens.

The number of new sanitary conveniences erected in the different types of buildings during the past six years is seen in the following table.

NEW SANITARY CONVENIENCES.

YEAR.				DWELLING-HOUSES.		FACTORIES AND WORKSHOPS.		OTHER PREMISES.		TOTAL.	
				W.C.s.	Privies.	W.C.s.	Privies.	W.C.s.	Privies.	W.C.s.	Privies.
1908	...	...	...	1854	25	254	2	78	5	2186	32
1909	...	...	...	1969	12	194	2	28	1	2191	15
1910	...	...	...	1945	18	217	2	—	—	2162	20
1911	...	...	...	2128	8	202	—	35	2	2365	10
1912	...	...	...	2917	9	196	—	95	—	3208	9
1913	...	...	..	3990	1	160	—	88	—	4238	1

The work of conversion of sanitary conveniences is one of peculiar difficulty in Bradford as many of the houses provided with the old type of privy middens have not the land attached necessary for the new water closets. In addition also the majority of these houses are back to back complicating greatly the problem of selection of suitable sites for the new conveniences.

In most of such cases it is well nigh impossible for owners of houses by a simple conversion of privy middens to bring about a condition of decency and cleanliness, and if the best results are to be attained it is necessary to sacrifice some houses to clear the site for the benefit of the remainder. In several cases recently this has been done by suggested closure of some of the houses to owners submitting schemes of improvement, but with the diversity of conditions presented it is by no means easy to maintain high ideals in carrying out this work.

Dustbins. The very small number of houses provided with dustbins as compared with the conversions taking place is a matter for comment. This arises chiefly for the want of suitable places to set dustbins so that the old middens have to be converted into dry ashpits in many instances. While dry ashpits are certainly an improvement on wet middens they are far from the best type of method of disposing of dry refuse. Regulation dustbins may be required under Section 56 of the Bradford Corporation Act, 1910, which states :—

The Corporation may by notice in writing require the owner or occupier of any dwelling-house to provide galvanised iron or enamelled iron dustbins for the convenient removal of house refuse and such dustbins shall be of such size and construction as may be approved by the Corporation and any owner or occupier who fails within fourteen days after notice given to him to comply with the requirements of the Corporation shall be liable to a penalty not exceeding twenty shillings and to a daily penalty not exceeding five shillings. Provided that this Section shall not authorise the Corporation to require the provision of a dust bin thereunder in any case in which a dustbin or ashpit in use at the passing of this Act is of suitable size and in proper order and condition.

The bust bins at present in use in Bradford are by no means of the best construction from a sanitary point of view as many are not provided with a tightly-fitting cover, and in common yards have no fixed place, while very few are raised from the surface of the ground. These are now principles which should be adopted in any regulation of dustbins.

For failing to comply with the requirements of notices served upon them to reconstruct or convert privies into water closets proceedings were taken in 36 instances. In 20 cases these proceedings were withdrawn on payment of costs amounting to £3 as the owners had in the meantime taken steps to comply with the notices. In 4 cases penalties and costs amounting to £8 9s. were imposed, while in the remaining 12 cases the proceedings were adjourned for over a year to allow of the completion of the work.

XII.—GENERAL NUISANCE WORK.

(A) DRAINAGE.

The number of tests of house drains done by the Inspectors was 3,889; they were carried out in the following manner:—

Nature of Test.	Number of Tests.	Result.	
		Defective.	Non-Defective.
Volatile	1727	535	1192
Coloured Water	1678	205	1473
Smoke (Rocket)	600	120	480
Do. (Machine)	23	10	13
Hydraulic	10	6	4
Totals	4038	876	3162

The very small number of water or hydraulic tests carried out last year is noticeable. There can be no doubt but that this is the most efficient test to apply to house drains, but it is not applicable to old drains. It should, however, be applied in all cases of new or reconstructed drains, and a serious effort should be made to bring about its more general use. Where this test has been adopted elsewhere it has been found that a much greater proportion of defective work is discovered but contractors soon get accustomed to doing work which will stand this test.

During the year the drainage of 57 blocks of property comprising 257 houses were dealt with under Section 41 of the Public Health Act, 1875, as against 4,531 houses in 1912, 349 in 1911, and 167 in 1910.

In 1913 rain water down spouts were disconnected from the drains or sewers in 879 houses. This involved a cost to the Local Authority of £286 2s. 2d., or an average of 19s. 3d. for the 297 down spouts in 306 houses with respect to which the local authority had some liability (Public Health Acts Amendment Act, 1907, as adopted in the Local Government Board Order of 5th July, 1909).

(B) OFFENSIVE TRADES.

Under the Public Health Acts, 1875 to 1907, bye-laws with respect to offensive trades are in operation in the City regulating the following businesses :—Blood boiler, blood dryer, and trades connected with blood and other putrescible animal matter; bone boiler, tripe boiler, tallow melter, fat melter, or fat extractor, size maker or manufacturer, fell-monger, oil distiller and refiner, gut scraper, fish fryer, artificial manure manufacturer, hide and skin dealer, and rabbit skin dryer.

(C) SMOKE PREVENTION.

In Bradford there is one smoke Inspector employed whole time in the work in which he is also assisted by the district sanitary Inspectors. Action is chiefly taken under the special powers acquired in the Local Acts of 1910 and 1913.

The following table shows the number of notices served and prosecutions undertaken during the past 6 years.

SMOKE PREVENTION. NOTICES AND PROSECUTIONS, 1908-1913.

Year.	Notices Served.	Prosecutions.	Cases Dismissed.	Withdrawn.	Fines.			Costs.			Total.		
					£	s.	d.	£	s.	d.	£	s.	d.
1908	68	38	—	1	10	18	6	15	5	0	26	3	6
1909	81	29	—	4	8	0	0	11	0	0	19	0	0
1910	67	22	—	4	7	10	0	6	18	0	14	8	0
1911	44	18	—	2	6	4	0	5	18	0	12	2	0
1912	83	23	6	1	40	0	0	31	5	0	71	5	0
1913	15	3	—	1	5	0	0	3	3	0	8	3	0

During the past two years there has been considerable improvement in the smoky condition of the atmosphere due to industrial chimneys. The manufacturers as a whole have appreciated the increased powers of the authority in dealing with this nuisance and have in many cases voluntarily carried out improvements in their plant so as to prevent undue smoke emission. The increased care which is now being taken is seen from the fact that certain large manufacturers have themselves made arrangements for periodic observations of smoke emission. In 1913 material improvement in boiler plant had been carried out in 19 works, while steam-raising plant has been displaced by electricity in 25 instances. There is still, however, room for further improvement. Frequent complaints are still made of the grit nuisance and in dealing with this much practical difficulty has been experienced.

(D) SANITARY INSPECTORS' WORK.

The following summary is supplied by the Inspector of Nuisances as to the work performed by the sanitary inspectors during the year.

Total number of Inspections 151603

Total number of Nuisances reported .. 13644

PARTICULARS OF WORK DONE, 1910-1913.

	Number of Cases			
	1910	1911	1912	1913
<i>Drainage and Sanitary Arrangements—</i>				
Choked drains Cleansed	1456	1887	1690	1458
Drains repaired.. ..	1175	1215	945	878
Drains reconstructed	476	1232	1733	1546
Extra drains provided	115	390	539	293
Cellars drained	13	75	79	47
Drains underneath houses abolished ..	67	130	61	34
Drainage system intercepted from sewers ..	38	72	40	13
Open drain inlets trapped	69	137	108	97
Waste pipes disconnected	127	231	93	221
Rain water pipes disconnected	247	912	871	911
Rain water conductors repaired or renewed	2319	3107	2502	2515
House sinks repaired or renewed	82	173	167	279
New house sinks provided	7	181	355	155
Water closet pedestals renewed	144	212	264	196
Water closets and flushing apparatus repaired	399	490	630	451
Water closets cleansed	173	310	282	230
Water closet apartments cleansed and lime-washed	208	632	534	728
Soil pipes repaired or renewed	66	140	109	130
Indoor soil pipes abolished	8	15	11	7
Urinals cleansed, amended, or screened ..	40	97	24	28
Urinals remodelled	13	7	14	6
New urinals provided	7	12	2	2
<i>Privies and Ashpits—</i>				
Deposit of slops in ashpits prohibited ..	110	108	165	201
General repairs executed	1028	1332	1067	1009
Privy apartments cleansed and limewashed	218	693	386	307
Dust bins repaired or renewed	93	91	229	161
<i>Dwelling-houses, &c.—</i>				
Dampness excluded	135	371	346	232
Roofs repaired	368	807	623	542

					No. of Cases.			
					1910	1911	1912	1913
General repairs executed	..	..	..	..	475	889	832	852
Houses or parts cleansed or limewashed	..	..	..	..	350	693	413	380
Ventilation improved	..	..	..	..	—	172	86	269
Overcrowding abated	..	..	..	..	14	25	26	74
Cellar areas cleansed	..	..	..	..	70	94	30	52
Caravans removed	..	..	..	..	51	47	85	27
<i>Courts, Back Yards, and Stable Yards—</i>								
Paving repaired in yards and passages	..	..	..	..	278	393	345	257
Yards and passages newly paved	..	..	..	..	—	37	34	28
Yards cleansed	..	..	..	..	171	319	183	321
Passages cleansed and limewashed	..	..	..	..	137	397	261	322
<i>Keeping of Animals, &c.—</i>								
Improper keeping of swine prohibited	..	..	..	..	17	37	24	5
Improper keeping of fowls, &c., prohibited	..	..	..	..	125	92	52	49
Accumulations of offensive matter removed	..	..	..	..	164	285	200	333
Accumulations of manure removed	..	..	..	..	271	262	247	177
Manure pits repaired	..	..	..	..	30	21	7	23
Manure pits provided	..	..	..	..	16	14	3	5
<i>Miscellaneous Nuisances—</i>								
Dangerous places made secure	..	..	..	..	—	123	262	222
Other unclassified nuisances abated	..	..	..	..	72	136	66	35
<i>Special Inspections—</i>								
Graveyards	..	..	..	..	603	489	308	324
Offensive trade premises	..	..	..	..	646	811	541	419
Zymotic diseases investigated and subsequent visits	..	..	..	..	3101	3003	4201	2795
Complaints specially investigated	..	..	..	..	1308	1400	1148	1226

The number of Statutory Notices served for the abatement of nuisances was 4,647, as against 4,482 last year.

The number of preliminary notices served for dangerous places to be made secure was 68, as against 77 last year.

In default of compliance with the requirements of notices served, 4 cases were heard before the City Magistrates. In one case an Order

was made to abate the nuisance within 14 days, and 9s. costs awarded the Corporation. In the remaining 2 cases the work having been completed satisfactorily, application was made for their withdrawal on payment of the costs, 3s. in each case.

Action was taken with reference to the housing of 20 adult Somalis and 10 children at an exhibition in Bradford called the "Somali Village." After the service of the summons special vans were provided for the natives, but the proprietor was fined 40s. and costs.

Proceedings were instituted against a person for an unprovoked assault on one of the District Inspectors whilst engaged in the performance of his duties. A fine of 7s. and costs was imposed, and the defendant bound over for 6 months in his recognisance of £5.

XIII.—LODGING HOUSES AND CANAL BOATS.

(A) COMMON LODGING HOUSES.

There were at the end of the year 35 registered common lodging houses in the City. In these houses there are 189 sleeping rooms affording accommodation for 1,606 men, 162 women, and 44 married couples, a total of 1,856 persons.

The total number of nights spent by persons in common lodging houses in Bradford in 1913 was 575,489 so that an average of 1,577, using 89 per cent. of the accommodation occupied the houses nightly.

During the year 2 common lodging houses were voluntarily closed, while 2 new houses were registered and one enlarged, while in 2 cases there was a change in the registered keepers.

The houses are kept under constant inspection by the common lodging house Inspector, and many structural improvements were carried out during the year.

(B) HOUSES LET IN LODGINGS.

During the past two years special efforts have been made to bring about better conditions in the sublet houses in certain parts of the City, and the following table shows the results of the work done in the four districts.

HOUSES LET IN LODGINGS IN CERTAIN DISTRICTS AT END OF EACH YEAR, 1911-1913.

Year	District				Total
	Bolton Road	George Street	Manchester Road	Westgate	
1911	36	98	25	38	197
1912	9	58	26	55	128
1913	—	4	6	18	28

The condition of these houses was improved chiefly by the issue of closing orders, 164 of the total, 197 houses being so dealt with. As a result of the action taken 1 house was demolished, 101 after improvements became let furnished to one family only, 46 were let unfurnished to one tenant, 29 are unoccupied, and 5 were converted to other uses.

At the present time there are 28 houses let in lodgings in these districts, 18 of which are in White Abbey and will be dealt with during the current year.

(C) CANAL BOATS.

The number of boats inspected in the City during the year was 452, and 43 breaches of the Canal Boats Acts and Regulations were found.

These defects were mostly of a minor character, but notices were

served in each case. No cases of infectious disease were notified on canal boats. There are no canal boats on the register of this Authority.

XIV.—MISCELLANEOUS.

(A) AMBULANCE WORK AND DISINFECTION.

The ambulance station for cases of Infectious Disease is situated at Leeds Road Hospital. At the end of the year there were two horse ambulances, two horses, and two drivers employed in the work. The Council, in 1913, determined to purchase a motor ambulance for this work. The number of patients removed in 1913 by the ambulances was 679.

Bradford has a well-equipped disinfecting station at Canal Road, with two motor vans for the removal of clothing and bedding; the number of articles disinfected there during the year was 12,462. The number of houses disinfected for infectious disease by the health staff was 1,109, while in a small number of cases disinfection was carried out at the request of manufacturers, property owners, and others, for which a small charge was made, the total amounts received being £8 18s. 9d.

(B) PUBLIC MORTUARY.

The new mortuary in Wilton Street was opened October 11th, 1910. During the past year 81 bodies have been deposited and 30 post mortem examinations made.

(C) CREMATORIUM.

The remains of 15 persons were cremated during 1913 at the Scholemoor Crematorium, in comparison with 9 during the previous year.

The following table, prepared by the Cremation Society of Great Britain, shows the number of Cremations carried out in Great Britain since the year 1885.

Table of Cremations carried out in Great Britain since the year 1885.

	1885-90.	1891.	1892.	1893.	1894.	1895.	1896.	1897.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.	1912.	1913.	Total.
Woking ...	154	99	104	101	125	150	137	173	240	240	301	273	275	143	138	95	140	108	119	105	106	114	125	128	3693
Manchester	3	30	47	58	52	51	88	88	83	96	81	92	98	97	90	98	116	106	114	124	149	172	1907
Glasgow	1	10	16	12	16	20	18	20	24	19	35	44	30	28	30	28	39	44	49	483
* Liverpool	2	...	27	23	40	40	54	35	40	35	46	34	32	46	37	50	52	66	669
* Hull...	17	13	18	20	15	17	29	37	15	21	25	27	23	277
Darlington	1	2	1	7	4	13	8	6	9	9	12	15	11	98
Golder's Green...	5	158	220	252	298	290	364	421	415	542	591	602	4158
* Leicester...	1	5	8	16	12	12	14	19	16	13	14	11	141
Birmingham	1	19	22	25	33	18	30	38	44	40	59	329
* Leeds	16	15	16	24	19	12	17	24	16	159
* Ilford...	9	23	18	19	24	22	20	32	21	188
* Bradford	1	14	13	6	13	14	13	9	15	98
* Sheffield	7	6	18	12	18	8	10	12	15	106
Total ...	154	99	107	131	172	209	201	250	367	444	444	445	451	477	567	604	743	707	795	855	840	1023	1134	1188	12,306

* Municipally controlled.

XV.—STAFF.

The Staff employed by the City Council as a Health and Education Authority, in public health and medical work, is as follows :—

- 1 Medical Officer of Health.
- 1 Bacteriologist.
- 1 Public Analyst.
- 1 Veterinary Inspector.
- 1 Chief Inspector of Nuisances.
- 1 Assistant Inspector of Nuisances.
- 2 Meat Inspectors
- 1 Fish Inspector.
- 1 Food and Drugs Inspector.
- 2 Inspectors under the Workshops and Shop Hours Acts.
- 1 Smoke Inspector.
- 1 Cowsheds Inspector.
- 2 Inspectors under the Housing, Town Planning, etc., Act, 1909.
- 13 District Inspectors ; 3 Disinfecting Officers ; 3 Ambulance Drivers ; 1 Storekeeper.
- 1 Chief Woman Inspector.
- 9 Health Visitors.
- 8 Clerks.

Hospital Staff—

- 1 Medical Superintendent.
- 1 Eye and Ear Surgeon.
- 2 Resident Physicians.

Tuberculosis Dispensary—

- 2 Medical Officers ; 4 Nurses ; and 1 Clerk Dispenser.

School Medical Staff—

4 Medical Officers.

2 Dentists.

8 Nurses.

2 Supervisors of Physical Exercises ; and 4 Clerks.

Infant Consultations—

2 Medical Officers.

6 Nurses.

1 Dispenser ; and 1 Clerk.

Milk Depot—

1 Manager ; 3 Clerks ; and Assistants.

APPENDIX.

TABLES REQUIRED BY THE LOCAL GOVERNMENT BOARD.

TABLE I.
VITAL STATISTICS OF WHOLE DISTRICT DURING 1913 AND PREVIOUS YEARS.

YEAR.	Population estimated to Middle of each Year.	BIRTHS.			TOTAL DEATHS REGISTERED IN THE DISTRICT.		TRANSFERABLE DEATHS.		NETT DEATHS BELONGING TO THE DISTRICT.			
		Un-corrected Numbers	NETT.		Number.	Rate.	of Non-residents registered in the District.	of Residents not registered in the District.	Under 1 Year of Age.		At all Ages.	
			Number.	Rate.					Number.	Rate per 1,000 Nett Births.	Number.	Rate.
1	2	3	4	5	6	7	8	9	10	11	12	13
1908	202,136	5998	...	20'14	4577	15'37	74	76	860	143	4579	15'38
1909	293,983	5507	...	18'73	4208	14'31	66	68	637	116	4210	14'32
1910	295,865	5490	...	18'56	4102	13'86	63	77	695	127	4116	13'91
1911	288,723	5480	5486	19'00	4269	14'79	71	153	765	140	4351	15'07
1912	289,618	5586	5603	19'35	4104	14'17	75	173	553	99	4202	14'51
1913	290,540	5808	5811	19'62	4372	14'76	91	193	741	128	4474	15'11

TABLE I.—continued.

NOTES.—This Table is arranged to show the gross births and deaths in the district, and the births and deaths properly belonging to it with the corresponding rates. For years before 1911 some of the corrected rates probably will not be available. The rates should be calculated upon 1,000 of the estimated gross population. In a district in which large Public Institutions for the sick or infirm seriously affect the statistics, the rates in Columns 5 and 13 may be calculated on a nett population, obtained by deducting from the estimated gross population the average number of inmates not belonging to the district in such institutions.

* In Column 6 are to be included the whole of the deaths registered during the year as having actually occurred within the district.

In Column 12 is to be entered the number in Column 6, corrected by subtraction of the number in Column 8 and by addition of the number in Column 9. Deaths in Column 10 are to be similarly corrected by subtraction of the deaths under 1, included in the number given in Column 8, and by addition of the deaths under 1 included in the number given in Column 9.

Area of District in acres (exclusive of area covered by water)	22,841	...	Total population at all ages	288,458	At Census of 1911.
	...	..	22,841	...	Number of inhabited houses	...	...	71,504
	...	..	22,841	...	Average number of persons per house	...	...	4.03

TABLE II.

CASES OF INFECTIOUS DISEASE NOTIFIED DURING THE YEAR 1913.

NOTIFIABLE DISEASE.	CASES NOTIFIED IN WHOLE DISTRICT.						TOTAL CASES NOTIFIED IN EACH LOCALITY.																	TOTAL CASES REMOVED TO HOSPITAL.							
	At Ages—Years.						North.	South.	East.	West.	Listerhills.	Great Horton.	Little Horton.	East Bowling.	West Bowling.	Exchange.	Bradford Moor.	Manningham.	Bolton.	Heaton.	Allerton.	Eccleshill.	Idle.		North Bierley East.	North Bierley West.	Thornton.	Tong.			
	At all Ages.	Under 1.	1 to 5.	5 to 15.	15 to 25.	25 to 45.																							45 to 65.	65 and upwards.	
Smallpox	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria (including Membranous Croup)	449	7	99	263	45	29	5	13	26	26	10	24	54	29	10	71	8	20	50	16	42	20	6	3	10	8	...	...	...	...
Erysipelas	225	1	2	4	26	78	83	15	11	10	6	7	13	43	24	26	2	9	13	5	5	5	12	9	6	3	...	...	...	...
Scarlet Fever	529	2	126	308	71	15	6	21	15	34	9	27	51	29	14	49	3	33	30	31	46	26	19	27	26	10	...	...	...	...
Typhus Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enteric Fever	81	...	2	8	16	38	15	6	2	7	4	10	1	13	5	9	1	5	6	1	2	...	...	...	...	...	...	...	...	...
Relapsing Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Continued Fever	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Puerperal Fever	15	...	...	...	3	12	...	2	1	1	1	...	1	2	...	...	...	2	1	...	...	1	...	...	...	...	...	...	...	...	...
Cerebro-Spinal Meningitis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Poliomyelitis	...	...	2	1	...	...	...	...	...	...	...	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pulmonary Tuberculosis	964	2	14	167	173	409	170	96	66	71	91	62	54	54	56	47	25	65	97	19	41	17	22	13	28	21	...	...	...	...	...
Other forms of Tuberculosis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Anthrax	377	8	48	136	81	75	21	43	21	29	16	17	34	31	20	21	4	39	22	13	20	5	13	7	8	9	...	...	...	...	...
...	13	...	...	...	6	7	...	2	...	...	7	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTALS	2656	20	293	887	421	663	300	198	142	178	144	147	211	202	131	223	43	173	219	86	156	74	72	61	80	54	41	21	772	...	...

Isolation Hospital provided by the City Council, situate in the South Ward ; also one in Thornton provided by a Conjoint Board. Patients are also sent to the Calverley and North Bierley Conjoint Hospitals, situate outside the Borough. The Sanatorium provided by the City Council is situate in North Bierley East.

TABLE III.

CAUSES OF, AND AGES AT DEATH DURING THE YEAR 1913.

CAUSES OF DEATH.		NETT DEATHS AT THE SUBJOINED AGES OF "RESIDENTS" WHETHER OCCURRING WITHIN OR WITHOUT THE DISTRICT.									TOTAL DEATHS WHETHER OF "RESIDENTS" OR "NON-RESIDENTS" IN INSTITUTIONS IN THE DISTRICT.
		All ages.	Under 1.	1 and under 2.	2 and under 5.	5 and under 15.	15 and under 25.	25 and under 45.	45 and under 65.	65 and upwards.	
All causes	Certified ...	4471	739	152	105	133	163	584	1253	1342	1011
	Uncertified	3	2	...	...	...	...	...	...	1	...
Enteric fever ...		18	...	...	...	2	1	8	6	1	12
Smallpox ...		...	...	...	...	...	...	...	...	...	...
Measles ...		36	13	8	12	3	...	...	...	...	...
Scarlet fever ...		10	...	1	3	5	...	1	...	...	7
Whooping-cough ...		22	15	1	6	...	...	...	...	...	1
Diphtheria and croup		53	4	4	16	28	...	...	...	1	36
Influenza ...		43	2	1	...	...	1	4	9	26	3
Erysipelas ...		9	...	...	...	...	...	...	4	5	6
Phthisis (Pulmonary Tuberculosis) ...		309	2	3	2	5	44	151	86	16	90
Tuberculous Meningitis ...		49	12	10	8	15	4	...	...	...	13
Other tuberculous diseases ...		67	14	11	5	7	9	10	9	2	27
Cancer, malignant disease ...		349	...	...	1	1	2	49	188	108	94
Rheumatic fever ...		12	...	...	...	3	4	2	3	...	1
Meningitis ...		33	10	4	5	5	3	3	3	...	7
Organic Heart Disease ...		552	2	2	1	11	19	77	214	226	77
Bronchitis ...		410	27	6	2	...	4	18	125	228	59
Pneumonia(all forms)		264	69	30	13	5	10	27	54	56	44
Other diseases of Respiratory organs ...		25	1	...	...	...	2	5	11	6	3
Diarrhoea and Enteritis ...		220	154	33	2	...	2	6	9	14	66
Appendicitis and Typhlitis ...		22	...	...	...	8	4	7	3	...	17
Cirrhosis of liver ...		31	...	...	...	...	...	3	23	5	3
Alcoholism ...		17	...	...	...	...	1	10	6	...	6
Nephritis and Bright's Disease...		150	1	...	2	2	5	31	68	41	20
Puerperal fever ...		6	...	...	...	...	2	4	...	...	1
Other accidents and Diseases of pregnancy & parturition		28	...	...	...	...	6	22	...	...	10
Congenital debility and Malformation, including premature birth ...		304	295	7	2	...	...	...	...	...	49
Violent deaths, excluding Suicide ...		115	2	7	6	12	20	21	25	22	41
Suicides ...		28	...	...	...	...	...	9	17	2	2
Other defined diseases ...		1260	118	24	19	20	18	112	376	573	313
Diseases ill-defined or unknown ...		32	...	...	...	1	2	4	14	11	3
		4474	741	152	105	133	163	584	1253	1343	1011
Sub-Entries included in above figures	14(a). Cerebro-spinal Meningitis	2	...	...	1	...	...	...	1	...	...
	28(a). Poliomyelitis										
	28 Anthrax	1	...	...	...	...	...	1	...	...	...

TABLE IV.

INFANTILE MORTALITY DURING THE YEAR 1913.

CAUSE OF DEATH.		Under 1 week.	1-2 weeks.	2-3 weeks.	3-4 weeks.	Total under 1 month.	1-3 months.	3-6 months.	6-9 months.	9-12 months.	Total Deaths under 1 year.
All Causes.	Certified ...	185	38	36	18	277	121	159	105	77	739
	Uncertified ...	2	..	..	..	2	..	..	..	..	2
{ Small-pox ... Chicken-pox ... Measles ... Scarlet Fever ... Diphtheria and Croup ... Whooping Cough...	...	..	..	..	..	..	..	..	..	..	..
	...	..	..	..	..	..	..	..	1	..	1
	...	..	..	..	..	..	..	..	3	10	13

	...	..	..	..	..	..	..	1	..	3	4
{ Diarrhea ... Enteritis ...	...	..	..	..	..	..	4	2	5	4	15
	...	1	1	5	1	8	36	46	37	10	137
{ Tuberculous Meningitis ... Abdominal Tuberculosis ... Other Tuberculous Diseases	...	..	..	..	..	..	2	10	3	2	17
	...	..	..	1	..	1	..	4	6	1	12
	...	..	..	..	..	..	..	3	2	3	8
	...	..	..	..	..	..	2	2	2	2	8

{ Congenital Malformations Premature Birth ... Atrophy, Debility and Marasmus Atelectasis Injury at birth Erysipelas Syphilis Rickets Meningitis (<i>not Tuberculous</i>) Convulsions Gastritis Laryngitis Bronchitis Pneumonia (all forms) Suffocation, overlying Other Causes	...	...	13	...	4	1	18	4	3	1	2	28
	...	...	99	17	10	6	132	6	...	...	...	138
	...	...	37	11	8	3	59	24	27	10	9	129
	...	...	6	...	...	...	6	...	...	...	...	6
	...	...	5	1	...	...	6	...	...	...	...	6

	...	...	...	2	1	...	3	6	5	...	1	15
	...	...	...	...	...	...	...	...	...	2	1	3
	...	...	...	...	...	1	1	...	5	1	3	10
	...	...	17	2	5	2	26	13	11	2	1	53
	...	...	...	...	...	1	1	1	...	...	...	2

	...	...	...	...	...	1	1	9	8	6	3	27
	...	...	1	...	1	1	3	10	25	16	15	69

	...	...	8	4	1	1	14	4	7	8	7	40
			187	38	36	18	279	121	159	105	77	741

Nett Births in the year { legitimate, 5500.
 illegitimate, 311.

Nett Deaths in the year of { legitimate infants, 696.
 illegitimate infants, 45.

TABLE V.

PUBLIC HEALTH TUBERCULOSIS REGULATIONS, 1912.

Summary of Notifications during the period from 1st February, 1913, to the end of the week ending 3rd January, 1914.

AGE PERIODS.	NUMBER OF NOTIFICATIONS ON FORM A.												NUMBER OF NOTIFICATIONS ON FORM B.				NUMBER OF NOTIFICATIONS ON FORM C.	
	Primary Notifications.												Primary Notifications			Total Notifications (<i>i.e.</i> , including cases previously notified by other doctors).	Poor Law Institutions	Sanatoria
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 and upwards	Total	Under 5	5 to 10	10 to 15	Total		
Pulmonary																		
Males ..	—	5	8	27	23	42	92	91	65	43	14	410	2	19	19	40	138	109
Females ..	2	5	21	23	31	53	91	84	30	18	12	370	—	18	16	34	34	123
Non-pulmonary																		
Males ..	2	25	37	20	18	17	19	18	10	1	3	170	1	5	3	9	—	1
Females ..	6	21	29	25	31	15	17	21	5	5	5	180	1	7	10	18	2	—
Totals ..	10	56	95	95	103	127	219	214	110	67	34	1130	4	49	48	101	174	233

ANNUAL REPORT
OF THE
SCHOOL MEDICAL OFFICER
1913.

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TO THE MEMBERS OF THE LOCAL EDUCATION AUTHORITY
OF THE CITY OF BRADFORD.

MY LORD MAYOR AND GENTLEMEN,

I have the honour to present to you the Annual Report of the School Medical Officer.

The report is drawn up in accordance with the instructions of the Board of Education, and shows that all the requirements of the Board have been carried out without serious difficulty.

It gives me much pleasure to report the excellent work which the members of the medical staff have done.

I have to acknowledge with thanks the help and co-operation I have received from the Director of Education.

I am, My Lord Mayor and Gentlemen,

Your obedient servant,

JOHN J. BUCHAN.

MEDICAL OFFICER'S DEPARTMENT,
TOWN HALL, BRADFORD,
31st May, 1914.

I.—ORGANISATION AND GENERAL ARRANGEMENTS.

(A) GENERAL STATISTICS.

Estimated population (1913)	..	..	..	..	..	290540
Average Number of children on rolls	..	..	..	..	..	46821
Average Number in attendance	..	..	..	..	..	37888
Average attendance per cent.	..	..	..	..	..	80.92
Number of half-timers	..	..	..	..	..	5061
Number of Schools (Provided)	..	..	..	..	129	
Number of Schools (Non-provided)	..	..	..	..	68	
					—	197

(B) STAFF.

With a view to co-ordinating the medical work of the City Council as a Health and Education Authority, the Medical Officer of Health became School Medical Officer on the 1st October, 1913. The staff at the close of the year consisted of the School Medical Officer, five whole time Medical Officers, one part time Ophthalmic and Throat Surgeon, two whole time Dentists, five Nurses, and one Supervisor of Remedial Exercises.

The work of the great majority of the teachers in aiding medical inspection and treatment has been of great value. Some of the teachers do not, however, take quite so intelligent a personal interest in the subject as others, and there is need for a more intimate co-operation between the teaching and the medical staff of the Authority.

Much help has been given in the work ancillary to medical inspection by the school attendance officers whose assistance has been greatly appreciated. Here, however, a still closer co-operation would be mutually beneficial.

The following up of cases found defective on inspection during the past year has not been so efficient as it could be desired on account of the comparative insufficiency of the nursing staff to the amount of purely medical work done. This subject has been under the consideration of the authority during the current year, and three additional nurses are being appointed.

(C) CHILDREN EXAMINED.

The classes of children medically inspected in Bradford and the numbers so examined in each class are as follows :—

A.—*Routine Inspection.*

								Number Examined in 1913.
i.	Under the Regulations of the Board of Education :							
(1)	All children admitted to school for the first time							
	during the year	..	..	..	..	..	..	4964
(2)	All children expected to leave school during the							
	year	..	..	..	..	..	..	4289
ii.	By instructions of the Local Education Authority :							
(1)	Children 11 years old or attaining this age during							
	the year	..	..	..	..	..	..	1443
(2)	Children attending Secondary Schools						.. ..	500

B.—*Inspection of selected children :—*

i.	Defective Children.							
(1)	Elementary school children not due for routine							
	inspection, but presenting obvious physical							
	defects	..	..	..	..	..	..	348
(2)	All children attending special schools						.. ..	717
ii.	Children not obviously defective :							
(1)	Candidates for street-trading licenses						.. ..	151
(2)	Children gaining scholarships during the year						..	520

It will be seen that there was during 1913 a very considerable increase in the number of children examined both at the routine and special inspections.

(D) GENERAL ARRANGEMENTS FOR INSPECTION.

The schedule issued by the Board of Education has with slight modifications been adopted for the work. The parents or guardians of the children were invited to be present during the inspection, which took place in all cases in the schools. The number of parents present is as might be expected, comparatively higher at the inspection of infant scholars than when older scholars are examined.

CHILDREN EXAMINED, 1913.

	Number Inspected	Parents present	Per cent.
Infants	4964	3082	62·1
Older children	5732	2215	38·6
Total	10696	5297	49·5

The number of visits to the schools made by the medical staff during the year was :—

VISITS TO SCHOOLS.

	Routine Inspection	Other Purposes	Total
Medical Officers	402	214	616
Nurses	148	85	233

II.—THE GENERAL CONDITION OF THE CHILDREN.

On Table II., page 236, will be found details of the general condition of the children examined at the routine inspection of 1913.

(A) CLEANLINESS.

In 1019 children, or nearly 10 per cent., the body was dirty or verminous, and in 2657 children, or nearly 25 per cent., the head was verminous. These figures illustrate the extreme frequency of dirty or verminous conditions in Bradford; the proportions in each group of school children are set out shortly in the following tables:—

DIRTY OR VERMINOUS BODIES.

Age Groups	Boys		Girls	
	Number	Percentage	Number	Percentage
Infants 	245	9·7	248	10·1
Older Children ..	250	8·7	276	9·6

DIRTY OR VERMINOUS HEADS.

Age Groups	Boys		Girls	
	Number	Percentage	Number	Percentage
Infants 	229	9·1	919	37·5
Older Children ..	151	5·2	1258	47·5

It is lamentable to have to record that nearly every second girl among the older scholars had nits or lice in her hair. The need for arousing the public conscience in this matter is extreme. Legislation

is useless to cope with an evil of the magnitude of this. A very great change in the attitude of the majority of women in Bradford to nits and lice in their children's heads is necessary, and it is to be hoped that we will soon see the time when the disgrace of sending girls to school in this condition will be recognised. Although these conditions are more frequent in the schools in the poorer localities it is not to be thought they are only to be found there, for in many of the better schools some astonishing revelations with respect to these conditions are made at medical inspection. It is small comfort for Bradford to know that there are places which show worse records in this matter, thus in Liverpool in 1912, 64.4 per cent. of the infant girls and 72.4 of the older girls had nits or lice in the hair.

The increase during school life of verminous conditions in the heads of girls is worthy of the careful attention of the Local Education Authority. Older girls generally should depend more on themselves than on their mothers to keep their heads free from nits, and through their appreciation of life history of the head louse and the methods of cleansing the head the mothers themselves might be influenced.

There can hardly be said to be any improvement in Bradford with respect to cleanliness in school children. The following tables show the results of inspection of the last four years.

DIRTY AND VERMINOUS CONDITIONS OF THE BODY.

Percentage among all children inspected in previous years.

	1910	1911	1912	1913
Infants	7.4	3.6	10.0	9.9
Older children ..	6.0	3.5	3.2	9.4

VERMINOUS HEADS.

Percentage among infant girls in previous years.

Condition	1910	1911	1912	1913
Nits	30·6	30·0	25·0	34·3
Pediculi	5·7	3·1	3·0	3·2
Total	36·3	33·1	28·0	37·5

VERMINOUS HEADS.

Percentage among older girls in previous years.

Condition	1910	1911	1912	1913
Nits only found ..	52·0	40·2	25·0	43·8
Lice	3·0	3·2	2·0	3·7
Total	55·0	43·4	27·0	47·5

From the record of the past year it would seem that the results of previous years cannot be taken to indicate that a permanent improvement has set in, and there is as much need as ever for a methodical carrying out of inspection and cleansing. This is best done through the agency of nurses, but on account of the many other duties these officers have had to perform it has not been possible for them to devote sufficient time to this work, which after all is to be regarded as one of the primary duties of the authority.

(B) CLOTHING.

Among the infant scholars inspected 1·3 per cent. were found to have insufficient and poor personal clothing, while among the older children there were only 0·7 per cent. insufficiently and poorly clad. The total number so found in both groups was only 111, a comparatively speaking small number.

INSUFFICIENT AND POOR CLOTHING.

Record of Previous Years.

Percentage	1910	1911	1912	1913
Infants	14·0	7·7	2·0	1·3
Older children ..	10·0	6·4	0·1	0·7

The footgear was unsatisfactory in 9·9 per cent. of the infant scholars, and 12·0 per cent. of the older scholars ; in 2·2 per cent. and in 3·6 per cent. of these respective classes the footgear was characterised as very bad.

FOOTGEAR.

Record of Previous Years.

Percentage	1910	1911	1912	1913
Infants	15·0	11·3	11·0	9·9
Older children ..	9·5	8·8	12·2	12·0

From these records it would seem that some improvement has been taking place in the clothing, but differences of opinion in making observations of this kind are liable to arise.

(C) NUTRITION.

Nutrition is a wide general term which represents broadly the result of physiological action in the maintenance and development of bodily tissue. In this report the children who have been recorded as of good nutrition include all obviously healthy children with a fair amount of subcutaneous fat, with firm muscles, and an alert and bright expression and of good colour. Children are regarded as of average nutrition who show no sign of malnutrition, whose skin and muscles do not give any indication of ill-health, who are neither pallid nor anæmic and give normal responses to muscular or mental action without evidence of fatigue. Those children have been considered of poor nutrition when they are undersized, with unhealthy skin and flabby muscles, or when they are more flabby or less anæmic, with a dull expression and a general lack of mental alertness.

NUTRITION OF SCHOOL CHILDREN. SUMMARY OF RESULTS IN 1913.

	INFANTS		OLDER CHILDREN		TOTAL	
	Number	Percentage	Number	Percentage	Number	Percentage
Good ..	2198	44.2	2851	49.8	5049	47.2
Average ..	2302	46.5	2484	43.3	4788	44.8
Poor ..	464	9.3	397	6.9	861	8.0

It will be noted that the older children have on the whole shown slightly less malnutrition than the younger. It will be readily understood that an estimate of the degree of nutrition made on the lines just

mentioned depends largely on the opinion of the examiner. It is not at present possible to eliminate in such estimates the personal factor, and it is therefore impracticable to make comparisons with respect to nutrition of the children in different areas. It may, however, be stated that the average standard of nutrition in Bradford children is higher than that recorded usually :—thus the percentage recorded of children suffering from malnutrition was in London in 1912, 9·3 ; in Liverpool, 10·5 ; in Hull, 11·6 ; in Cardiff, 4·4 ; and in Stoke-on-Trent, 15·2.

(D) HEIGHT AND WEIGHT.

Table III., page 244, gives the average height and weight of the children inspected in 1913 at the various ages. The height and weight of Bradford children are below those in the country generally. From recent anthropometric studies in England it would seem, however, that the average height and weight in the North of England are usually less than in the South, while these are also less in town areas than in country districts. The comparison therefore with England generally is unfair to Bradford, but taking the ages at which the majority of children were examined in 1913 the following comparison may be made between Bradford and the other urban districts of England.

Boys.

Age last Birthday	Height (in inches)		Weight (in lbs.)	
	Bradford	England (Urban)	Bradford	England (Urban)
4	38·4	38·5	35·8	35·5
5	40·4	40·4	37·8	38·2
12	53·9	54·7	69·9	71·5
13	55·4	56·1	74·5	77·2

GIRLS.

Age last Birthday	Height (in inches)		Weight (in lbs.)	
	Bradford	England (Urban)	Bradford	England (Urban)
4	40·1	38·1	34·1	34·6
5	40·7	40·2	37·1	37·3
12	51·2	54·9	62·7	72·3
13	54·3	56·7	71·5	79·2

It will be noticed from these tables that the older children in Bradford do not compare favourably with the older children in urban districts in England.

III.—THE PHYSICAL CONDITION OF SCHOOL CHILDREN.

While routine medical inspection is concerned with the recognition of those well-established diseased conditions which require immediate medical treatment, its primary and more important object is the detection of those lesser signs of illness and hygienic faults which accompany or precede the onset of disease. It is not therefore to be wondered at that in any record of the results of a careful inspection the number of defects discovered is very large. Many of these defects are so advanced that nothing but active medical treatment will remedy them, but the larger number—larger always in proportion to the care taken at the inspection—are to be remedied by simpler measures of which the supervision of the feeding and general hygiene of the child are the chief.

In Bradford last year the number of defects recorded in the 10,696 elementary school children examined was 5,358 or just over 50 per cent. The nature of these defects are set out on 'Tables II., pages 236—239, and it is now necessary to consider the conditions in detail.

(A) THE EYE.

External Eye Diseases. In all 196 or 1·8 per cent. of the children examined at the routine inspection were found suffering from some form of external eye disease, of which the chief noted were blepharitis and conjunctivitis—inflammatory eye conditions which usually respond fairly readily to simple treatment. Among the children aged 3 and 4 years the percentage suffering from these diseases was 1·5, among children 5 to 6 years it was 2·2, and among children 9 to 13 years it was 1·7. The increase of the percentage of these defects among children of from 5 to 8 years of age is worthy of note, as it would appear to be due at least in part to the eye strain involved by the commencement of education in the schools.

Strabismus. The number of children suffering from strabismus, or squint, was 270 or 2·5 per cent. of the children examined.

Squint was distinctly more prevalent among girls than boys, while it was most prevalent among children in the age group 5 to 8 years.

STRABISMUS IN EACH SEX AND AGE GROUP.

Age Group	BOYS		GIRLS		TOTAL	
	Number	Percentage	Number	Percentage	Number	Percentage
3- 4 years	29	2·4	29	2·7	58	2·5
5- 8 years	47	3·5	63	4·5	110	4·0
9-13 years	40	1·3	62	2·1	102	1·7
Total ..	116	2·1	154	2·9	270	2·5

The increase of squint at the age period 5 to 8 years is due certainly to the eye strain resulting from the educational training of the child. The greater effect resulting from this eye strain in very young girls is to be expected as a sex peculiarity at this age.

Defective Vision. The vision of older children was tested with Snellen's test types, but owing to the difficulty of applying this test in young children it was omitted in the case of the infants. The results are shown on Table II., page 236.

Of the 5,455 children so examined 3,319 only had quite normal vision, the remaining 2,136 or 39.1 per cent. presented a greater or less defect in vision.

CONDITION OF VISION AT AGES 9-13 YEARS.

	$\frac{6}{6}$	$\frac{6}{9}$	$\frac{6}{12}$	$\frac{6}{18}$	$\frac{6}{24}$	$\frac{6}{36}$	$\frac{6}{60}$
Number	3318	980	395	291	168	190	112
Percentage.. ..	60.9	17.9	7.2	5.3	3.1	3.5	2.1

Children whose vision is reported as worse than $\frac{6}{18}$ must be regarded as having a most serious defect of vision. Education along ordinary lines is not suitable for these children. If satisfactory instruction is to be given to them special arrangements require to be made. These arrangements should be associated with the ordinary elementary schools and not with a school for blind.

They should take the form of special defective vision classes in which oral teaching and part of the physical exercises is done with

normal children, while literary work and manual training are carried out under such conditions that the eyes are used to a minimum extent. Such classes have already been instituted in London, Birmingham, and Leicester, and have given good results in preserving the eyesight of these children and promoting their education. From the results in the foregoing table it will be noted that there would appear to be a large number of children in Bradford who would be suitable for such special classes.

The greater incidence of defective vision among girls than among boys has been remarked upon in previous reports, and it is again to be noted in the results of this year.

DEFECTIVE VISION IN EACH SEX.

	Slightly Defective $\frac{n}{9}$ to $\frac{n}{18}$		Seriously defective $\frac{n}{24}$ and over		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Boys ..	668	24·6	210	7·7	878	32·4
Girls ..	998	36·3	260	9·4	1258	45·8

There can be no doubt that the causes of defective vision are still to a large extent unknown. It is, however, clear that at the age at which school life commences in many children the optical condition of the eyes is such that the school work undertaken there involves eye strain. Such an eye strain in the young causes physical changes in the eye with the result that the vision deteriorates, so that at the later ages of school life numerous and serious defects are recorded.

The infant at birth has not an emmetropic eye ; it gazes into infinity, and only learns in time to see without effort nearer objects. If the

development of the infant's eye to emmetropia is delayed or interfered with, eye strain will result from any continuous effort at near vision with probably also a permanent defect. For the prevention of eye defects the careful study of the development of visual acuity in the very young is essential. Such a study involves laborious work, but it appears to present a fruitful field of research.

(B) THE THROAT AND NOSE.

Tonsils. In 2037 children or 19 per cent. examined at the routine inspection the tonsils were found enlarged. The degree of enlargement varied greatly, but in recording the enlargement the cases were divided into two classes—"slightly enlarged" when no operative interference was required, and "much enlarged" where operative treatment was considered necessary. The incidence and degree of tonsillar enlargement at the different age groups are seen in the following table:—

CONDITION OF THE TONSILS.

Age Groups	Slightly Enlarged		Much Enlarged		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3- 4 years	402	17·7	120	5·3	522	23·0
5- 8 years	433	16·0	168	6·2	601	22·2
9-13 years	856	14·9	58	1·0	914	15·9
Total ..	1691	15·8	346	3·2	2037	19·0

It will be noticed that during school life the amount of tonsillar enlargement decreases.

Adenoids. This condition is most frequently found associated with enlargement of the tonsils, and together they have frequently most serious consequences on the health of the child. The number of children suffering from adenoids was 952 or 8.9 per cent. of the children examined. The extent of the lymphoid enlargements which constitute adenoids was recorded as marked or slight where operative interference was or was not respectively considered necessary.

ADENOIDS AT EACH AGE GROUP.

	Slight		Marked		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3- 4 years	181	8.0	23	1.0	204	9.0
5- 8 years	224	8.2	34	1.2	258	9.4
9-13 years	469	8.1	21	0.3	490	8.4
Total ..	874	8.1	78	0.7	952	8.9

The decrease in the incidence of marked adenoids at the later ages of school life is largely due to earlier surgical treatment.

PERCENTAGE OF ENLARGED TONSILS AND ADENOIDS.

Record of Previous Years.

	1910	1911	1912	1913
Enlarged tonsils ..	10.0	12.8	19.4	19.0
Adenoids	9.3	10.6	6.8	8.9

(C) THE EAR.

Otitis Media purulenta. This condition, which is variously known as otorrhoea, or as running or discharging ears, was the most frequent disease of the ear found on inspection. In all 334 or 3·2 per cent. of the children suffered from this condition in one or other ear. In 5 cases both eyes were found discharging. The importance of this condition in its effect on the future welfare of the child can hardly be over-estimated. Mere palliative measures in its treatment is not enough, for though these measures frequently cure the condition, the cure is accompanied in a large proportion of the cases with serious loss of hearing in the ear. Early operative interference is necessary if the hearing is to be saved.

OTORRHOEA AT EACH AGE GROUP.

Age group	Cases	Percentage
3-4	55	2·4
5-8	76	2·8
9-13	203	3·6
Total ..	334	3·2

The increase noted in otorrhoea at the later school ages is not to be ascribed directly to the life of the child in school, as this disease arises most frequently in association with enlarged tonsils or adenoids, or as a direct result of some of the commoner zymotic diseases.

Defective Hearing. The number of children found on inspection to be suffering from defective hearing was 302, or 2·8 of the children

examined. Roughly speaking, hearing was considered normal when the child could respond to a forced whisper at 20 feet distance; it was considered slightly defective when a response could only be given at 10 feet, and when no response was given at this latter distance the defect was considered a marked one.

DEFECTIVE HEARING AT DIFFERENT AGE GROUPS.

Age group	Slightly Defective		Markedly Defective		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3-4	31	1.3	—	—	31	1.3
5-8	39	1.4	5	0.2	44	1.6
9-13	213	3.7	14	0.2	227	3.9
Total ..	283	2.6	19	0.2	302	2.8

The increase in defective hearing at the higher ages of school life is therefore marked. To only a small extent is this disease due to the conditions of school life, but its recognition is most important from many points of view at an early age. Children deaf to any appreciable extent are often quite unjustly regarded as dull, stupid children, because they are unable to take full advantage of oral tuition. The teacher therefore should know which children present any degree of deafness so that they can be placed in a favourable position in the class for hearing. Teachers themselves should speak slowly and clearly so that all the children may hear, and, if under these special conditions a slightly deaf child cannot take advantage of the instruction, special arrangements for its tuition must be made. But the recognition of deafness in childhood is of importance also with respect to cure as the

most common kind of deafness is a Eustachian deafness which in childhood is very amenable to treatment.

(D) THE TEETH.

At the routine inspection of children the number of decayed teeth were noted in each case. In this statement of results a distinction is drawn between children with sound teeth, those with one to three decayed, and those with four or more decayed.

CONDITION OF THE TEETH IN AGE GROUPS.

Age Groups	All Sound		Less than Four Decayed		Four or more Decayed	
	Number	Percentage	Number	Percentage	Number	Percentage
3-4	1010	44.8	787	34.8	463	20.4
5- 8	757	27.9	987	36.3	958	35.8
9-13	1652	28.8	2646	46.2	1434	25.0
Total ..	3419	31.9	4422	41.3	2855	26.8

The majority of the teeth found decayed among the younger children belonged to the temporary set, but even in these children it was comparatively frequent to find that the first permanent teeth—the six year old molars had already begun to decay. A further consideration of dental disease will be found on pages 208—214.

(E) TUBERCULOSIS.

Routine medical inspection does not give any accurate estimate of the prevalence of tuberculosis amongst school children, as a large pro-

portion of the affected children are excluded from the ordinary Public Elementary school. Before referring to the cases detected in the course of routine inspection it is useful to mention the number of cases of tuberculosis among children notified during the last 11 months of last year under the Local Government Board Order.

NOTIFICATION OF TUBERCULOSIS.

FEBRUARY—DECEMBER, 1913.

Form of Tuberculosis	Age				Total
	Under 1 year	1—5 years	5—10 years	10—15 years	
Pulmonary	2	10	29	50	91
Non-Pulmonary ..	8	46	66	45	165
Total	10	56	95	95	256

At the routine inspection in 1913, 501 or 4·7 per cent. of the children examined were found suffering from tuberculosis or suspected tuberculosis.

Pulmonary Tuberculosis. There is a very considerable difficulty in establishing a diagnosis of pulmonary tuberculosis in childhood; the cases have therefore been divided into two classes, the first in which the diagnosis was made clear by the physical examination of the chest or by laboratory methods, and the second in which, although the accompanying symptoms strongly suggested tuberculosis, the physical examination gave no unequivocal signs and laboratory methods failed. In all 363 cases of tuberculosis of the lungs were discovered in children examined; of these 110 belonged to the first class and 253 to the second.

PULMONARY TUBERCULOSIS.

Age Group	Diagnosis Established		Early or Doubtful Cases		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3- 4 years	10	0.4	19	0.8	29	1.2
5- 8 years	22	0.8	52	1.9	74	2.7
9-13 years	78	1.3	182	3.1	260	4.5
Total ..	110	1.0	253	2.4	363	3.4

The very considerable increase in the proportion of cases at the later ages will be noticed.

Tuberculosis (other forms). The total number of cases of non-pulmonary tuberculosis discovered was 138 or 1.3 per cent. of the children examined ; in no less than 122 of these the disease was located in glands.

OTHER FORMS OF TUBERCULOSIS.

Age Period	Glands		Bones or Joints		Remaining Forms		Total	
	Number	%	Number	%	Number	%	Number	%
3- 4 years	19	0.8	2	0.08	1	0.04	22	1.1
5- 8 years	44	1.6	4	0.1	—	—	48	1.7
9-13 years	59	1.0	8	0.1	1	0.01	68	1.1
Total	122	1.1	14	0.1	2	0.01	138	1.3

This table is interesting as it appears to show an increase in the amount of tuberculosis other than pulmonary at the age period of from 5 to 8 years. This is probably not the case, and the apparent lower incidence of the disease at the ages of 3 and 4 years may be explained by the fact that many children suffering from one or other of these forms of tuberculosis are purposely kept from school until the age of compulsory attendance is reached.

Apart from active cases of tuberculosis other than pulmonary, 18 children were noted with healed lesions affecting the bones or joints, giving rise to deformities.

(F) HEART DISEASE AND RHEUMATISM.

In all 372 children or 3·5 per cent. were found suffering from heart disease; in 56 cases the disease was congenital; and 316 acquired.

HEART DISEASES AT EACH AGE GROUP.

Age Group	Congenital		Acquired		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3-4 years	15	0·6	50	2·2	65	2·9
5-8 years	13	0·4	78	2·8	91	3·3
9-13 years	28	0·4	188	3·2	216	3·7
Total ..	56	0·5	316	3·0	372	3·5

A considerable increase in the number of cases of acquired heart disease is noted as school life progresses. The proportion of cases amongst boys and girls is seen in the following table.

HEART DISEASES ACCORDING TO SEX.

	Congenital		Acquired		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
Boys (all ages)	27	0.5	172	3.2	199	3.7
Girls (all ages)	29	0.5	144	2.7	173	3.2

It will be noticed that the amount of acquired heart disease discovered on inspection was greater among boys than girls.

Acquired heart disease is most frequently the result of rheumatism, scarlet fever, or chorea. Cases of acute rheumatism are not found in the school, and medical inspection as usually carried out does not readily detect those aberrant forms of rheumatism which appear so frequently to be followed by organic disease of the heart.

Enquiry into the previous medical history of the children examined at the routine inspection showed that 145 had suffered from some form of rheumatism. The age incidence of these was as follows:—

RHEUMATISM—CHILDREN AFFECTED PRIOR TO INSPECTION.

Age Groups	Boys		Girls		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3-4 years	—	—	1	0·1	1	0·05
5-8 years	9	0·7	2	0·1	11	0·4
9-13 years	43	1·5	90	3·1	133	2·3
Total ..	52	1·0	93	1·8	145	1·4

The greater proportion of girls, especially at the higher ages, who have previously suffered from rheumatism will be noticed.

(G) LUNG DISEASES.

Apart from Tuberculosis 822 children or 7·7 per cent. were found affected with some abnormality of the respiratory system. These cases were almost all of a bronchitic and catarrhal nature, and in many the affection was only slight.

PULMONARY DISEASES OTHER THAN TUBERCULOSIS.

Age Group	Number	Percentage
3-4 years	237	10·4
5-8 years	275	10·1
9-13 years	310	5·4

The large proportion of younger children sent to school with bronchitic illness is worthy of comment. In younger children bronchitis is more apt to be considered a slight illness, but the exposure resulting from school attendance at these ages is distinctly more harmful.

The previous medical history of the children examined showed that 965 had suffered from attacks of serious pulmonary disease.

LUNG DISEASES—CHILDREN AFFECTED PRIOR TO INSPECTION.

Age Group	Bronchitis		Pneumonia		Total	
	Number	Percentage	Number	Percentage	Number	Percentage
3-4 years..	85	3.8	63	2.8	148	5.6
5-8 years..	141	5.2	121	4.4	262	9.7
9-13 years..	285	5.0	270	4.7	555	9.7
Total ..	511	4.8	454	4.2	965	9.0

(H) NERVOUS SYSTEM.

There were 178 children or 1.7 per cent. of those examined suffering from some disease of the nervous system.

NERVOUS DISEASES.

Age Group	Chorea		Epilepsy		Stammering		Others		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
3-4 yrs.	3	0.1	1	0.04	10	0.4	18	0.7	32	1.2
5-8 yrs.	—	—	2	0.07	19	0.7	8	0.2	29	1.9
9-13 yrs.	10	0.1	2	0.03	70	1.2	47	0.8	129	2.1
Total ..	13	0.1	5	0.05	99	0.9	73	0.7	190	1.8

Chorea. This disease was found on 13 occasions among the children examined. All the cases were at once excluded from school, as attendance at school of children suffering from Chorea should not be permitted on three separate grounds.

- (1) The liability to a grave organic disease of the heart is increased by the physical exertion involved by such attendance.
- (2) The educational efforts of the child aggravate its symptoms and retard its cure, and
- (3) While Chorea cannot at present be definitely stated to be an infectious disease, an apparently imitative condition is occasionally set up among the other scholars.

The disease mostly affects girls, but 2 of the 13 cases noted last year were boys; 3 of the cases were in the age group 3-4 years, and 10 in the age group 9-13 years.

Stammering. The number of children presenting this condition discovered at the routine inspection was 99 or 0.9 per cent. The incidence of stammering was therefore comparatively large. It was found about twice as frequently among boys compared with girls, 63 cases being boys and 36 girls. It is also to be noted that the proportion of children who stammer increases with age. Stammering is due to a variety of causes, some of which are not wholly understood, but all children who show any tendency to stammer should be noted by the teacher for special examination and supervision. Special attention must be given to those children so that they are taught early to bring about that proper co-ordination of phonation, the lack of which forms the most common cause of stammering.

(1) SKIN DISEASES.

The number of children presenting some skin disease found during routine inspection was 300, or 2·8 per cent.

SKIN DISEASES.

Age Group	Number	Percentage
3-4 years	66	2·9
5-8 years	74	2·6
9-13 years	160	2·7
Total	300	2·8

Of these cases 22 suffered from ringworm; this is a very small number. It will be seen from the following table the cases of ringworm discovered at the routine medical inspection has greatly decreased during the past four years. (See also page 204.)

RINGWORM IN PREVIOUS YEARS.

	1910	1911	1912	1913
Cases	77	78	23	22
Percentage of children examined	1·0	0·9	0·3	0·2

(K) OTHER DISEASES OR DEFECTS.

There were 3,147 children noted on inspection presenting diseases or defects other than those enumerated above. The chief of these were enlarged lymphatic glands and deformities of bones arising from rickets.

			Enlarged Lymphatic Glands		Deformities				Miscellaneous	
					Rachitic		Non-Rachitic and Non-Tuberculous			
Age Groups	Number	%	Number	%	Number	%	Number	%		
3- 4 years ..	337	14.8	132	5.8	40	1.7	105	4.6		
5- 8 years ..	499	18.4	140	5.1	91	3.3	162	5.9		
9-13 years ..	679	11.7	159	3.7	398	7.1	415	7.2		
Total ..	1505	14.1	431	4.1	529	5.0	682	6.4		

IV. TREATMENT.

In order to obtain the best results from medical inspection the Local Education Authority must make arrangements to secure treatment for all defects. These arrangements in Bradford are somewhat highly developed and for purposes of report may be considered under two heads.

(A) WORK ANCILLARY TO TREATMENT.

When a child is found in school presenting a physical defect the parents or guardians are informed of the condition and advised to obtain treatment for it. As many of the defects found on inspection are apparently minor in character, their importance is not readily

recognised. It is therefore, necessary to explain carefully to parents the serious consequences which may arise from defects which they have been accustomed to regard as trivial. Each year parents have shown an increasing readiness to seek a remedy for defects pointed out to them. But cases still frequently arise where for a variety of reasons adequate medical treatment is not obtained. Systematic re-inspection and home visitation is therefore necessary to follow up all cases when physical defects have been detected. In Bradford this re-inspection has been carried out by the medical staff chiefly in the schools and at the Clinic while the visitation at the homes has been carried out by the nurses. A great deal of useful information as to the exact causes of the conditions noted on inspection can be obtained by home visitation if it is carried out by intelligent workers with a knowledge of disease. Nurses, besides following up cases in their homes, visit the schools for the detection of dirty or verminous conditions, running ears, sore eyes, and the like.

FOLLOWING UP BY NURSES.

Number of schools visited	..	..	..	70,
Departments visited	..	..	..	148
Re-visits	..	..	..	85
Visits to homes	..	..	..	278

DEFECTS DISCOVERED BY NURSES.

Ringworm	..	..	68	Vermin	..	..	1670
Running ears	..	..	123	Nits only	..	..	2794
Sore eyes	..	..	224	Itch	..	..	54
Sores on skin	..	..	322	Squint	..	..	152
Total	..	..	5407				

It will be noticed that a comparatively small number of visits were made to the homes by the nurses in 1913. A great deal of the following

up was kindly undertaken by the school attendance officers, but with the increase of the nursing staff it is hoped that a much larger proportion of this work will be carried out by them.

Cases followed up by the school attendance officers usually presented themselves later at the inspection clinic for examination, the number of all such examinations made there in 1913, was 4333.

(B) THE PROVISION OF TREATMENT.

Medical inspection and re-inspection early demonstrated that in Bradford the facilities for obtaining adequate treatment of school children were not sufficiently ample or readily available. The Local Education Authority, therefore, determined to institute a school clinic in 1908. Although here mentioned in connection with treatment the school clinic acts in three capacities, namely :—

- (1) As a centre of record of the physical condition of school children.
- (2) As a place for special examination of those cases where prolonged time or special equipment is required or where questions of school attendance or following up arise (Inspection clinic), and
- (3) As a place for carrying out remedial treatment (Treatment Clinic).

Since the institution of the school clinic the scope of the work has been much extended and the total amount of treatment carried out has greatly increased. This continuous expansion of the work necessitated in 1913 a removal to larger premises in Great Horton Road. These premises have, however, only been temporarily devoted to this purpose as they are not particularly well suited for it.

There were certain extensions of treatment decided upon in 1913. Arrangements were made for operative treatment of diseases of the throat, nose, ear, and eye, at the City Hospital, Leeds Road, and a consulting surgeon was appointed to carry out this work. Fourteen beds have been provided so that all the cases may be kept under observation for a short time after operation.

In the new temporary premises in Great Horton Road, arrangements were made for carrying out treatment by remedial exercises in all cases likely to benefit by these methods, and a woman with special training and qualifications was appointed to supervise this work.

The following summary shows the numbers of cases dealt with at the School Clinic from 1908 :—

Year	Number Treated	Examined only	Total Attendances	Attendances per week
1908	841	590	4050	122
1909	2323	1325	14516	329
1910	3520	2772	19315	439
1911	5019	2655	20325	462
1912	6279	3095	25579	581
1913	8004	4333	34940	791

(A)—*Inspection Clinic.* There were 4,333 children who attended the Clinic in 1913 for purposes of examination only. These children may be divided into four groups of

- (1) Children attending for examination in connection with
 medieal inspection and school attendances .. 2956
- (2) Children examined as to their suitability for admission
 or attendance at the special or open-air schools .. 213

- (3) Children attending for examination as to physical fitness
for half-time employment or street trading .. 182
and
- (4) Children in whom the possibility of conveying infection
arose 982

Of the 2,956 children who attended in connection with medical inspection or school attendance, 31 were infant children who had not attended school and who, though, were thought by their parents unfit to attend school ; these children made 32 attendances at the Clinic.

The conditions found in the remaining 2,925 cases are shown in the following table :—

SPECIAL EXAMINATIONS IN CONNECTION WITH MEDICAL INSPECTION AND
SCHOOL ATTENDANCE.

Disease	Number of Children			Total Attendances
	Completed Cases.	Remaining Under Observation	Total	
Pulmonary Tuberculosis	290	182	472	1444
Enlarged Glands ..	103	51	154	464
Respiratory Diseases ..	160	105	265	873
Anæmia, Rickets, and Rheumatism	355	177	532	1431
Heart Disease	65	24	89	258
Nervous Diseases ..	84	34	118	367
Ringworm	98	24	122	180
Other Skin diseases ..	3	22	25	36
External Eye Disease ..	2	20	22	52
Adenoids and Enlarged Tonsils	138	57	195	468
Diseases of the Ear, etc.	90	45	135	368
Bone Disease and Deformities	46	91	137	273
Miscellaneous	465	194	659	1330
Total	1899	1026	2925	7544

The following table shows the examinations made in connection with special schools and employment of children.

Object of Examination	Number of Children			Total Attendances
	Completed Cases	Remaining Under Observation	Total	
Admission or Attendance at Special Schools ..	137	9	146	251
Attendance at Open-air School	57	10	67	116
Half-time Employment	26	1	27	39
Street Trading Licenses	154	1	155	157
Total	374	21	395	563

Of the 982 children examined because of the possibility of infection, 310 were found to be in a probable or actual infectious condition and were excluded. The conditions found in these children were:—

Diphtheria Bacilli in Throat	112
Otorrhoea or Rhinorrhoea after Infectious Disease	74
Desquamation of Stem	5
Suppurating Glands	16
Paralysis after Diphtheria	15
Other Conditions	88
Total	310

(B)—*Treatment Clinic.* There were 8,004 children who attended the Clinic in 1913 for treatment. The conditions from which these children suffered are shown in the following table:—

CASES TREATED IN 1913.

Diseases	Total Children	Total Attendances
Eye :		
Defective Vision	1031	3161
External Diseases	648	4412
Skin :		
Ringworm of Head	408	2028
Ringworm of Body	92	240
Sore Heads	702	2312
Seabies, Impetigo, &c. ..	636	2779
Otorrhoea and Rhinorrhoea ..	388	5238
Teeth :—		
Inspection cases	2230	2230
Casual Cases	1560	1681
Sores, Accidents, &c.	309	1373
Total	8004	25454

It will be noted that the diseases treated fall generally into two classes (1) minor ailments in which the treatment is so prolonged, tedious, or difficult to carry out in many homes that efficiency in treatment in certain classes of the community is little likely to be secured *e.g.*, in ringworm of the head, or body, sores or sore head, seabies, impetigo, external eye disease, otorrhoea, and rhinorrhoea, and (2) defects or diseases in which more expert treatment is necessary than can reasonably be obtained by a large number of children in the community, *e.g.*, for ringworm (by X-rays), defective vision and defective teeth. The recent extension of the work in diseases of the throat and nose and in treatment by remedial exercises previously mentioned, falls within the second class.

The treatment of minor ailments likely to be neglected at home is carried out by the medical officers at the Clinic, who are greatly assisted

in these cases by the nurses. This is a most important part of the work of the Clinie, with most beneficial results on the child's health, and incidentally on its education by hastening its possible return to school. It will be seen from the preceding table that children suffering from these conditions each attend on an average eight or nine times, the greatest attendance being on account of otorrhoea and rhinorrhoea where the average is fourteen times, and the least on account of ringworm of the body where it is two-and-a-half times.

The treatment of ringworm of the head by X-rays has been extremely successful in Bradford, the results having been almost uniformly good with no bad after effects.

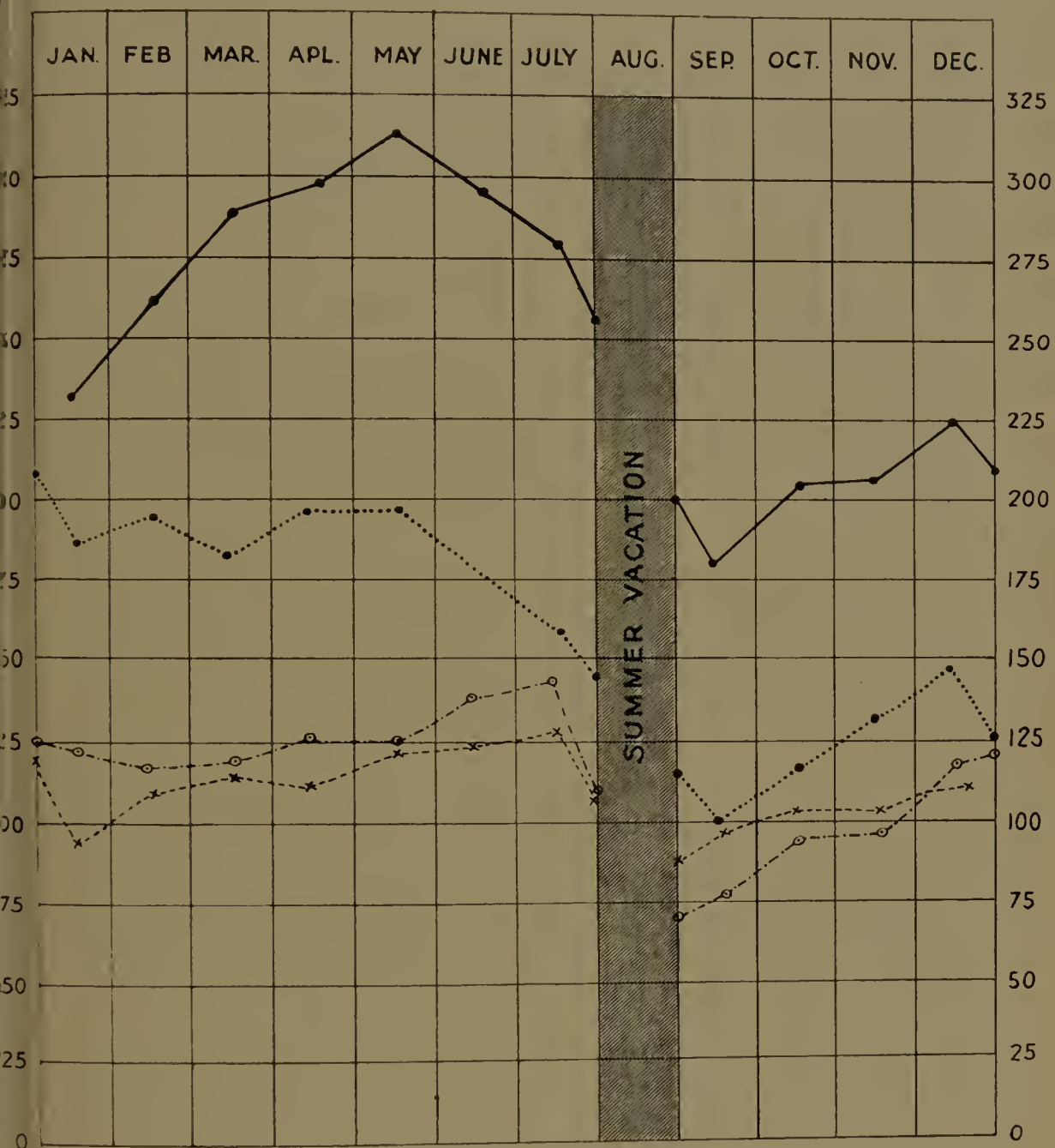
During the year 204 cases were under treatment with X-rays, the details of which are seen in the following table:—

X-RAY TREATMENT OF 204 CASES OF RINGWORM OF THE SCALP.

Number of Cases Treated.	Total Number of Exposures	Average Number of Exposures per Child.	Total Number of Attendances made at Clinic.	Average Number of Attendances per Child.	Total Number of Days under Observation.	Average Number of Days per Child.	Average Time of Exposure per Case.	Average Time per Exposure.
204	806	3'95	496	2'42	6393	31'33	45 minutes	11'4 minutes

From the Chart on page 205 it will be seen that the average number of scholars absent from school on account of ringworm has in 1913 fallen to less than one-half of what it was in 1910 when this method of treatment was adopted.

PART — SHOWING AVERAGE NUMBER OF SCHOLARS ABSENT FROM SCHOOL ON ACCOUNT OF RINGWORM EACH MONTH DURING THE YEARS 1910, 1911, 1912, AND 1913.



Year 1910 indicated by —●—●—●—

„ 1911 „●.....●.....●.....

„ 1912 „ —○—○—○—○—○—○—

„ 1913 „ —x—x—x—x—x—x—

The arrangements for treatment of defective vision have been on lines similar to those in operation in previous years.

All scholars in upper departments are tested by the Head Teacher, and those found to have abnormal vision again tested by one of the Medical Staff. Those Children who need further examination are sent for to the Clinic, where they are examined, and spectacles prescribed if necessary.

All children suffering from squint, in both Upper and Infant Departments, are asked to attend the Clinic for examination, so that suitable lenses may be adjusted at the earliest opportunity. Many squints, which would later necessitate operative treatment, are in this way cured.

During the year 1,220 children attended the eye clinic and underwent a retinoscopic examination. Of this number 1,033 required spectacles to correct some error of refraction, whilst 177 suffered from other conditions for which spectacles were not indicated.

Those requiring spectacles numbered 435 boys and 598 girls.

Hypermetropia accounted for by far the majority of the errors, simple hypermetropia occurring in 372 and hypermetropic astigmatism in 400.

Myopia was found in 101 children and myopic astigmatism in 80.

Mixed astigmatism was discovered in 80 cases.

The error of refraction was accompanied by squint in 133 of the total number for whom spectacles were prescribed.

DEFECTS OF VISION FOR WHICH SPECTACLES WERE PRESCRIBED.

Age	Hypermetropia		Myopia		Hypermetropic Astigmatism		Myopic Astigmatism		Mixed Astigmatism		Total		Defects Complicated by Squint	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
3	4	2	—	—	—	—	—	—	—	—	4	2	—	1
4	6	6	—	2	1	1	—	—	—	—	7	9	5	3
5	21	10	—	—	4	2	—	—	—	—	25	12	12	4
6	17	12	2	2	10	9	—	1	1	1	29	25	6	10
7	21	17	5	3	19	12	2	1	1	1	48	34	11	5
8	16	22	2	2	27	19	1	9	2	2	47	54	7	11
9	17	23	—	3	24	24	1	5	6	6	44	61	12	8
10	15	23	7	5	22	39	6	5	7	7	52	79	2	5
11	22	32	10	14	25	31	9	10	8	8	74	94	7	4
12	17	25	5	13	19	41	5	8	12	12	56	99	5	6
13	9	32	7	11	18	46	1	13	5	13	40	115	4	3
14	—	1	1	2	2	2	—	—	1	—	4	5	—	2
over 14	1	1	3	2	1	2	—	3	1	1	5	9	—	—
	166	206	42	59	172	228	25	55	30	50	435	598	71	62
Total	372		101		400		80		80		1033		133	

All Children for whom spectacles are prescribed are instructed to attend the eye clinic at some subsequent date, usually three to six months after the primary examination, in order that any re-adjustment of lenses or frames may be carried out.

In the 177 cases in which it was not considered necessary to prescribe spectacles the children were found to be suffering as follows :—

Defects not sufficiently serious	..	..	..	41
Anæmia and Debility	..	..	..	40
Retinal Charges	..	..	..	17
Nystagmus	..	..	..	12
Corneal Ulceration	..	..	..	25
Blepharitis and Conjunctivitis	..	..	..	32
Disease of Optic Nerve	..	..	..	2
Other Conditions	..	..	..	8
				<hr/>
Total	..	..	..	177
				<hr/>

V.—DENTAL DISEASE AND TREATMENT.

During the year the children in thirty-six schools were inspected by the school dentists. The schools inspected in 1912 were again inspected in 1913 with the exception of Usher Street and St. Peter's, where the inspection was carried out in January, 1914.

The total number of children examined up to eleven years was 13,364, and the general results are shown on the Tables on pages 212 and 213.

It will be noticed that in 39 per cent. of the children the teeth were in a dirty state, in 19 per cent. the gums were inflamed or septic, and

in 35 per cent. grinding capacity was bad. The early decay in many cases of permanent teeth will also be noticed. The number of children under dental treatment during the year was 3,790, while the number of teeth actually treated was 7,879—5,688 temporary and 2,191 permanent teeth.

A second dental surgeon was appointed and began duty on September 1st, 1913, and he undertook the inspection and treatment of children of five to eight years of age in schools not previously under systematic supervision. Consequently the number of children examined was much in excess of that in 1912.

The accommodation at the Clinic for dental work was much improved by the removal to the Lister Terrace premises where a rinsing-room is now provided. One of the nurses now devotes her whole time in assisting the dentists at inspection and treatment.

The report which follows has been supplied by the Senior Dental Surgeon (Mr. Knowles) :—

The conditions found were on the whole satisfactory, the sound or artificially sound permanent teeth being 94·647, a decided proportional improvement. Of the decayed permanent teeth 2,384 were saveable, and 2,041 unsaveable.

There is no doubt that the number of unsaveable teeth would have been considerably less if the parents had consented to their children being treated in previous years. It is certainly very difficult to get parents to sanction treatment when their child has apparently a normal set of teeth with perhaps one or two slightly decayed permanent molars. They were until recently of the opinion that the Dental Clinic was merely a tooth extracting department, and as a consequence, many of the teeth which could at one time have been made artificially sound are now hopelessly decayed owing to the parents' neglect in seeking treatment when advised.

The children with clean and fairly clean teeth are not at all unsatisfactory numerically. At the same time I must still advocate the supply of tooth brushes to all school children at a nominal charge if necessary. The Open-air and Special Schools furnish good examples of what can be accomplished by regular cleansing of the teeth.

I do not deny that food plays a most important part in the formation and development of teeth, and that the soft requiring foods eaten to-day do not tend to produce a good sound set of teeth nor a well-developed jaw. I am, however, aware of the difficulty in trying to persuade people to change the character of their food-stuffs, and I believe that the only alternative at the present time is the regular use of the tooth brush to remove the soft, sticking foods which play such an important part in the formation of dental caries.

The number of children treated this year is in excess of 1912, 3,790 attending for dental treatment.

Of this number 2,230 have been sent for by appointment whilst 1,560 casual cases have attended.

The greatly increased number of casual cases (*i.e.*, children who are brought by their parents entirely of their own free will out of school hours) is an indication of the increased interest taken by parents in the Dental Clinic.

The number of fillings remains about the same, but the permanent extractions have increased owing, as I have described previously, to parents not seeking treatment when early enough or when advised. Unfortunately there are still a number of parents who refuse to allow their children to come to the Clinic. The number this year being 596, only 56 of this number acquainting us of their intention to seek treatment privately. The number of children previously treated and requiring further treatment this year was 145. Those attending numbered 115 and thirty-two failed to come.

The services of the Nurse recently added to the Dental Staff has been of the greatest value. The new rinsing and retiring room which was added last year has also been very useful. We have hesitated in the past to administer general anæsthetics on account of the limited accommodation and the time we could allow children to remain in retiring room, and are supervised by the nurse until quite recovered from effects of anæsthetic.

One half-day each week is now devoted to extraction under gas and ethyl chloride.

I have purposely withheld in past reports from stating of the benefits accruing from the establishment of dental treatment of school children.

I however, feel after close upon four years' whole time work amongst these children, I may be allowed to speak with some little authority on the subject. Every doctor knows, and now every Head Teacher in Bradford agrees that there is considerable difference both physically and mentally between a child requiring dental treatment and one already treated.

Personally we have had under our care this year several cases which have been of a most interesting, both as regards their conditions and the value in proving beyond doubt the intimate relationship between Dental Disease and other Diseases. Here are two illustration cases :—

(1) Girl 13. Suffering from septic discharging tuberculous gland. The wound had been dressed for some weeks, but the discharge continued. After extraction of one or two carious teeth the discharge ceased and sinus healed.

(2) A girl came to the Clinic in an extremely exhausted condition as she never had a full night's sleep for some weeks. She had a cough, a high temperature, and could not eat anything. The girl was found suffering from a septic infection of the gums which was diagnosed as cause of the trouble. The condition found was treated systematically each day for about a week and three times weekly for another fortnight. As the conditions in the mouth improved so did the child's general health, and although she was considered previously to be dying, after dental treatment she became strong and healthy again.

I have only quoted these cases which are amongst numerous others to show that the dental clinic is doing good work in preventing at least many of the minor ailments in children.

AVERAGE NUMBER OF TEMPORARY AND PERMANENT TEETH PER CHILD.

213

GIRLS.

Age	Number Examined	Temporary Teeth.			Permanent Teeth.		
		Number Present	Average per Child	Number Decayed	Average per Child	Number Present	Average per Child
5	1009	19601	19.43	7050	6.99	748	0.74
6	1351	23817	17.70	9941	7.35	5119	3.79
7	1465	20783	14.18	10490	7.09	11327	7.73
8	1175	12881	10.96	7423	6.31	12947	11.01
9	1174	9714	8.27	6017	5.11	15989	13.61
10	394	2402	6.09	1439	3.65	6152	15.61
11	15	63	4.20	40	2.66	278	18.53
Total ...	6583	89261	13.55	42400	6.44	52560	7.95
						2526	0.38

BOYS.

Age	Number Examined	Temporary Teeth.			Permanent Teeth.		
		Number Present	Average per Child	Number Decayed	Average per Child	Number Present	Average per Child
5	1139	18757	16.46	4416	3.87	657	0.57
6	1443	27479	18.97	10785	7.47	4414	3.05
7	1483	22021	14.85	10377	6.99	9310	6.28
8	1183	13971	11.81	7631	6.45	11706	9.89
9	1117	9340	8.36	6193	5.54	14218	12.73
10	395	2869	7.26	1902	4.56	5868	14.60
11	21	127	6.05	87	4.14	339	16.14
Total ...	6781	94564	13.94	41391	6.10	46512	6.85
						1899	0.28
Total Boys and Girls	13364	183825	13.75	83791	6.27	99072	7.41
						4425	0.33

GIRLS.

Age	Number of Children Treated.	Temporary Teeth			Permanent Teeth					
		Dressings	Extractions	Scalings	Dressings	Extractions	Scalings	Teeth Filled		
								Amalgam	Amalgam and Cement	Cement
5	43	1	70	...	...	...	2	...	4
6	117	...	191	...	...	...	44	5	...
7	263	2	403	...	1	1	162	18	19	
8	301	1	524	...	3	3	164	13	32	
9	312	5	486	1	8	...	17	16	18	
10	97	2	128	...	4	...	9	7	6	
11	2	...	5	...	...	...	1	...	...
Total ...	1135	11	1807	1	16	4	24	630	59	79

BOYS.

Age	Number of Children Treated.	Dressings	Extractions	Scalings	Dressings	Extractions	Scalings	Teeth Filled		
								Amalgam	Amalgam and Cement	Cement
								Amalgam	Amalgam and Cement	Cement
5	32	1	61	...	...	...	...	5	...	...
6	136	3	234	...	...	1	...	43	2	...
7	247	...	433	2	...	...	...	140	14	16
8	252	3	420	...	2	2	5	139	28	...
9	249	...	397	...	4	3	7	182	15	5
10	102	...	176	...	4	...	5	51	10	2
11	4	...	1	...	...	...	...	3	2	...
Total ...	1022	7	1722	2	10	6	17	563	71	23
Total Boys & Girls	2157	18	3529	3	26	10	41	1193	130	102
Casual Cases ...	1560*	45	2000	...	168	379	13	43	10	35
Open-air School ...	39	2	46	...	...	2	...	19	2	3
Special Schools ...	34	4	41	...	...	5	...	7	1	2
Grand Total ...	3790	69	5616	3	194	396	54	1262	143	142

VI.—SPECIAL SCHOOLS AND CLASSES.

Arrangements were in operation in 1913 for the suitable education in special schools or classes of children presenting certain physical and mental defects.

These special schools and classes were as follows :—

	Accommoda- tion.	Average Attendance, 1913.
<i>For Physically Defective Children.</i>		
Open-air School, Thackley	140	140
<i>For Mentally Defective Children.</i>		
Grange Road Special School	40	18
Green Lane Special School	40	15
Lapage Street Special School	40	18
Usher Street Special School	40	34
<i>For Blind Children.</i>		
Carlton Street Special School.. .. .	48	24
<i>For Deaf Children.</i>		
Carlton Street Special School.	54	21

Green Lane and Grange Road Special Schools amalgamated at Grange Road on the 26th August, 1913.

(A) THE OPEN-AIR SCHOOL.

This school is provided for delicate children, whose education can only be carried on under the most favourable hygienic conditions. The children most suited for admission are therefore those presenting symptoms of deficient nutrition, the pretubercular, convalescents from non-infectious ailments, certain cases of heart disease or nervous disease, and the like. There is therefore a large group of children whose education under open-air conditions is desirable, and among these children there is a smaller class for whom still further requirements in the way of residential open-air education are needed.

The open-air school at Thackley was continued in use as a non-residential institution in 1913, along the lines already described in previous reports, but during the year provision was made for residential accommodation there for twenty boys. This cannot of course be said to adequately meet the needs of the City, but the Education Authority have at present under their consideration the further extension of residential accommodation. It may also be noted here that under the Tuberculosis Scheme of the Council, arrangements have been made for the treatment in a children's sanatorium of early tuberculous cases and this will to some extent relieve the pressure at Thackley.

The late date in the year at which residential accommodation became available makes it impossible to give for 1913 any record of value of the very beneficial effect which this has had, but the general results of the non-residential part of the school continue to be of the most encouraging nature. These results are given on the Tables on pages 219 and 220.

At the Open-air School the requirements of the individual child, having regard to its physical condition, receives special attention. On admission each child is very carefully examined and a record is made of its height and weight, the lung capacity and haemoglobin estimate and all other facts worthy of note. From time to time during its attendance the child is medically examined while a very full examination is made prior to discharge.

The average duration of attendance was 5.21 months; twenty-one boys and seven girls attended for the second time and one boy and one girl made their third visit to the School.

A comparison of the physical condition on admission and on discharge is most instructive. Of the 344 children who left the school during the year only thirteen were described as of "good" nutrition on admission, in 116 the nutrition was average, and in 215 it was poor

or very poor on admission. Whereas on discharge the figures were recorded thus. Nutrition good, 247; average, 93; and poor, 4.

The average gain in weight was 2·61 kilos (about 5½lbs.), and the average gain in height 3·11 centimetres (about 1¼ inches); the average percentage increase in hæmoglobin was 23·44: this is estimated by Tallquist's comparative colour method. The chest measurements shewed an average increase of 1·08 inches, indicative of a comparatively large increase in the vital capacity of the lungs.

The following summary gives a short resumé of the signs of improvement in the children who have attended the school during the past four years.

Year	Number of Children	Increase in Weight. Kilos.	Increase in Height. Centms.	Increase in Haemoglobin	Increase in Chest Measurement	Average stay in Months
1910	458	1·42	1·6	19·5	0·7	—
1911	407	2·5	3·4	24·5	0·8	6·2
1912	505	2·15	2·93	21·57	1·12	5·13
1913	502	2·6	3·11	23·44	1·08	5·21

On the Table on page 218 is set out the particular diseases treated throughout the year.

By far the largest number of the children exhibit defects either of the Respiratory or Circulatory systems, thus tuberculosis and other diseases of the lungs and heart disease with anæmia account for 405 of the cases.

It should be noted that these numbers represent individual diseases. Most of the children classified as Phthisis showed also some degree of anæmia, but the number 162 in the table only represents the children

admitted in whom anæmia was the primary and most marked defect.

Of the 344 discharged during 1913, 314 were either cured or very considerably improved—in two no change could be determined, one was undoubtedly worse; eleven were admitted to other institutions, seven left the City, and nine were excluded from school because of some infections or contagious condition. A small number of children were withdrawn by their parents during the year without the permission of the School Medical Officer, but several of them, after being interviewed at the Clinic and the position discussed with them, were anxious for their children to be allowed to return.

OPEN-AIR SCHOOL.

ADMISSIONS AND DISCHARGES IN 1913.

Disease	Admitted			Discharged			Remaining in School. Dec. 31st, 1913.		
	M.	F.	Total	M.	F.	Total	M.	F.	Total
Tuberculosis									
Lungs ..	79	76	155	63	54	117	37	48	85
Glands ..	9	12	21	8	14	22	5	1	6
Others ..	10	8	18	5	6	11	6	7	13
Anæmia, &c.	51	47	98	50	73	123	23	16	39
Rickets ..	5	2	7	5	5	10	3	1	4
Respiratory ..	9	6	15	12	14	26	1	1	2
Heart ..	1	3	4	5	5	10	1	2	3
Nervous ..	4	8	12	5	14	19	3	3	6
Ear	—	1	1	—	2	2	—	—	—
Eye	—	3	3	—	4	4	—	—	—
Total ..	168	166	334	153	191	344	79	70	158

CASES DISCHARGED FROM OPEN-AIR SCHOOL IN 1913.

GENERAL STATEMENT AS TO CONDITION ON ADMISSION AND ON DISCHARGE.

Disease	Sex	Number of Cases	Physical Condition						Result		
			On Admission			On Discharge			Improved	Unchanged	Worse
			Good	Average	Poor	Good	Average	Poor			
Phthisis ..	M	63	2	17	44	45	18	—	60	—	—
	F	54	1	23	30	43	10	1	47	1	1
Other Tubercular Diseases	M	10	—	—	10	3	7	—	7	—	—
	F	16	2	7	7	14	2	—	15	—	—
Anæmia, &c.	M	50	1	16	33	35	15	—	47	1	—
	F	73	3	24	46	47	24	2	68	—	—
Respiratory	M	13	—	7	6	12	1	—	11	—	—
	F	14	—	6	8	12	2	—	13	—	—
Heart ..	M	4	—	2	2	3	1	—	4	—	—
	F	5	—	4	1	4	1	—	4	—	—
Nervous ..	M	5	—	3	2	4	1	—	5	—	—
	F	14	3	3	8	11	3	—	13	—	—
Rickets ..	M	5	—	—	5	4	—	1	4	—	—
	F	5	—	—	5	3	2	—	4	—	—
Lateral Curvature	M	3	—	—	3	1	2	—	3	—	—
	F	4	—	2	2	3	1	—	4	—	—
Otorrhoea ..	M	—	—	—	—	—	—	—	—	—	—
	F	2	—	2	—	1	1	—	1	—	—
Eye ..	M	—	—	—	—	—	—	—	—	—	—
	F	4	1	—	3	2	2	—	4	—	—
Total ..		344	13	116	215	247	93	4	314	2	1

CASES DISCHARGED FROM OPEN-AIR SCHOOL IN 1913.

WEIGHTS, HEIGHTS, ETC., ON ADMISSION AND ON DISCHARGE.

Disease	Sex	Average Increase				Average Length of Stay. Months
		In Weight (kilos.)	In Height (c.m.)	In Haemoglobin (%)	Chest Measurement (inches)	
Phthisis ..	M	2.47	2.98	21.90	1.04	6.90
	F	2.83	3.39	22.83	0.95	7.19
Other Tubercular Diseases	M	2.46	2.18	21.86	0.86	7.23
	F	2.13	2.57	21.30	0.98	5.43
Anæmia, &c. ..	M	1.73	2.05	21.67	0.93	4.10
	F	1.60	2.39	23.21	0.87	4.55
Respiratory ..	M	1.72	1.87	19.45	0.65	3.82
	F	3.47	3.28	19.46	0.94	6.16
Heart	M	3.33	3.33	16.67	0.75	4.43
	F	4.30	5.13	23.33	1.33	5.20
Nervous ..	M	1.20	1.86	20.26	1.00	4.20
	F	1.97	2.46	22.92	0.96	5.28
Rickets ..	M	3.00	3.15	24.50	0.88	4.70
	F	3.33	3.93	32.33	1.00	6.20
Lateral Curvature	M	2.55	3.73	21.50	1.25	6.17
	F	2.70	4.15	26.75	1.16	10.31
Otorrhoea ..	M	—	—	—	—	—
	F	4.50	4.50	30.00	1.50	4.00
Eye	M	—	—	—	—	—
	F	1.66	3.00	30.00	1.50	8.00
Total ..		2.61	3.11	23.44	1.08	5.21

(B) THE BLIND SCHOOL.

All the children attending the blind school were frequently examined during the year. Dr. Little, the Ophthalmic surgeon conducted a special examination of forty-six of the children and reported fully thereon.

Totally Blind Children. Of these there were nine, eight of whom

owed their blindness to ophthalmia neonatorum, and one to double optic atrophy supervening on meningitis.

Partially Blind Children. Of the thirty-seven children so classified the vision in twenty-seven was found extremely bad and little likely to improve, while in ten some improvement under expert or operative treatment was thought possible. The causes of the partial blindness in these twenty-seven cases were as follows:—

Ophthalmia Neonatorum	8
Congenital defects such as high hypermetropia, nystagmus, and amblyopia	4
Congenital cataract	4
Corneal Nebulæ	1
High myopia	10

Dr. Little was of opinion that “all these twenty-seven children were too blind to attend any other form of class than that of the special one at Carlton Street. They are all too blind to recognise the fact that some of their companions in the same class are blind. They doubtless know which of the children are stone blind, but the information is not obtained by visual investigation. The vision of those cases, except the cases of myopia, was less than $\frac{6}{60}$, and in many of them owing to the presence of disease of the macula and nystagmus they do not possess the power of fixing their eyes on any object looked at. It is perfectly right for those children to use the little vision which they possess as much as possible, because in those children who do not have myopia the defect is improved by use but the amount of the improvement is not likely to be very appreciable. This is in complete contrast to the cases of myopia. The ten cases of myopia are all cases of very high myopia. All myopes have an inherent disposition to acquire all their knowledge of things through the eyesight. Such over use of the eyes can only lead to further deterioration of the eyes in contrast to those of the other class who can use their eyes as much as they desire without any fear of damaging them. Entire rest for the myopic eye is the very best and only suitable treatment. If myopic children are to be educated they must be educated in

such a way that the eyes will not be made use of or as little as possible.

The difficulty of reading and writing is got over by training them in the Braille method, and this method trains the child for the purpose of reading to rely on the tips of her fingers and forget the eyes. In due time the eyes may improve, and if no improvement were to take place the eyesight present would be retained, while on the other hand if ordinary reading and writing were to be pursued I feel certain that the eyes of myopics would greatly deteriorate in time. I feel strongly that if all cases of advancing myopia were taught in this way there would be fewer cases of high myopes with the distressing complications too often seen.

In teaching the Braille method there is no need to bandage up seeing eyes. What is needed is a desk with a double deck. The child will work with her hands between the two decks."

The ten cases which Dr. Little reported as likely to improve under skilled treatment were referred to him for treatment and further report.

(C) OTHER SPECIAL SCHOOLS.

The need for further classification of the children attending mentally defective schools has been felt, especially in view of the passing of the Mental Deficiency Act, 1913, and this has been undertaken during the current year.

The new schools at Lister Lane for the deaf and physically defective children will be open in the middle of 1914.

VII.—SPECIAL GROUPS.

(A) SECONDARY SCHOOL CHILDREN.

In all 500 children attending the Secondary Schools were examined.

The results of the inspections are set out in Table II., pages 240 and 242, but comparisons may be made here with the older children attending elementary schools as the examinations were carried out in a precisely similar manner.

Nutrition is described as good in 69·6 per cent. of Secondary school children as compared with 49·8 per cent. (age nine to thirteen), and 44·2 per cent. (age three to eight) of elementary scholars.

The condition of cleanliness of the body and head are considerably better than in the elementary schools. No cases of verminous heads were discovered, but in 3·6 per cent. nits were found in the hair.

The incidence of definite disease amongst this group was not great, the commonest of the defects found being adenoids, 2·5 per cent.; enlarged tonsils, 11·8 per cent.; tonsils much enlarged, 5·6 per cent.; enlarged lymphatic glands, 11·2 per cent.; heart disease, 1·0 per cent.; suspected phthisis, 1·6 per cent.; other lung diseases, 2·0 per cent.; and deformities of spine, bones, and joints, 11·2 per cent. All these figures compare very favourably with the results among elementary children.

The height and weight of secondary school children are considerably above the average of the elementary school children in Bradford and England and Wales generally. See Table III., page 246.

(B) SCHOLARSHIP CHILDREN.

Arrangements were made in 1913 for the medical examination of all children attending elementary schools who were awarded scholarships tenable at one of the secondary schools or at one of the Bradford Grammar schools.

Five hundred and twenty were examined, 294 boys and 226 girls. The ages of this group ranged from nine to thirteen years, and the findings have been recorded in Table II., pages 240 and 243.

The general condition was on the whole excellent with the exception that ten girls were found to have verminous heads.

The heights and weights compare very favourably with those for the average Bradford Elementary School children and also with the average for the country generally.

The serious diseases discovered were small in number.

The excellent physical condition of the large majority of these children was notable and seems to indicate that in the educational race, he wins who has the best health.

(C) STREET TRADING.

The systematic examination of children for street trading licences was begun late in the year 1913, and in all 151 children were examined. Of these 142 were found fit to work, while nine were unfit. These nine children suffered in three cases from early pulmonary tuberculosis, in two cases from heart disease, in three from anæmia and malnutrition, and in one case from chronic bronchitis.

Of the 151 children examined all were boys except one, a girl of eleven years, found physically fit. The ages of the candidates are seen in the following table :—

CANDIDATES FOR STREET TRADING LICENSES.

Age	Number Examined	Number Fit to Work	Number Unfit to Work	Phthisis	Heart Disease	Anæmia and Malnutrition	Chronic Bronchitis
11	105	99	6	2	2	1	1
12	22	20	2	—	—	2	—
13	7	6	1	1	—	—	—
14	14	14	—	—	—	—	—
15	3	3	—	—	—	—	—
Total 151		142	9	3	2	3	1

VIII.—INFECTIOUS DISEASES.

The infectious diseases were not prevalent during 1913.

There were an exceptionally small number of cases of measles during the three first quarters of the year, but the number increased steadily in the last quarter, when there were distinct indications of the disease assuming epidemic form.

The number of cases of Scarlet Fever and Diphtheria was very low.

The accompanying charts indicate the weekly incidence of Measles, Scarlet Fever, Diphtheria, Whooping Cough, Chicken Pox, and Mumps.

IX.—SCHOOL BUILDINGS.

One new school (Thornbury Infants' Department) was opened during the year. This school, which is of the pavilion type of building, is provided with ample facilities for efficient ventilation and lighting of the classrooms, affording healthy conditions for the children.

In the older type of schools there is still much to be desired in the existing conditions of ventilation, and the absolute necessity for a maximum of fresh air in every classroom cannot be too strongly emphasised and insisted upon.

Improvements and alterations to buildings and internal arrangements have been carried out extensively. An account of the improvements follows :—

Barkerend Girls'. Remodelled all the desks and fixed new single seats in all the classrooms.

Great Horton Church. Supplied two new groups of desks.

Drummond Road Senior. Made three gangways instead of one in all classrooms.

Ryan Street Boys' and Girls'. Remodelled all desks and fixed single seats in all the classrooms. Supplied two groups of tables and chairs.

Ryan Street Junior. Made three gangways instead of one in all classrooms and fixed a new group of desks in one classroom.

Fairweather Green Mixed and Infants'. Made three gangways in all classrooms instead of one.

Barkerend. Fixed new lavatory basins in Boys' and Girls'. Redesked three classrooms and made new Teachers' room in the Infants' Department, and made new teachers' room in the Girls' Department.

Bierley Church. Supplied new scholars' desks to the Mixed Department.

St. James'. Supplied one new group of desks and one group of tables and chairs.

Feversham Street Boys' and Girls'. Fixed new lavatory basins.

Ryan Street Infants'. Enlarged a classroom.

Usher Street Girls'. Remodelled desks in all classrooms.

Frizinghall Mixed and Infants'. Formed three gangways instead of one in all classrooms.

Thornbury. Converted the Mixed and Infants' Departments into Boys' and Girls' Departments. Refurnished the Infants' Department with new desks, tables, and chairs suitable for Girls. Remodelled all the seats and desks in the Mixed Department suitable for Boys, and supplied a group of chairs and tables. Improved the heating in two classrooms and the ventilation in all the classrooms—Boys' Department.

Allerton School. Made three gangways instead of one in all classrooms—both departments.

Whelley Lane Boys'. Improved the lighting and ventilation in a classroom.

Barkerend Boys'. Remodelled all scholars' desks and fixed single seats in all classrooms and improved ventilation in the Mainroom (cost over £70).

Otley Road. Made a new Laundry classroom (cost about £20).

Clayton Lane Dining Centre. Made a combined Cookery, Laundry, and Woodwork Centre (cost about £50.)

Feversham Street Boys'. Improved the ventilation in all the rooms at a cost of over £40.

Carlton Street. Remodelled and refurnished a classroom in the Boys' Department at a cost of over £35. Improved the ventilation in four classrooms (one in each department) at a cost of £18.

Undercliffe Infants'. Fixed new w.c. in baths for use of children.

Undercliffe Mixed. Formed three gangways instead of one in five classrooms.

Barkerend Junior. Improved ventilation in two classrooms and two Mainrooms.

Highfield. Converted a store room into a 'Teachers' room—Mixed Department—and improved the desking in some of the classrooms.

Belle Vue Boys' and Girls'. Fitted the Boys' and Manual Training room throughout with electric light, and a portion of the Girls' Department.

Barkerend Infants'. Transferred Babies' Class to a larger and brighter classroom and made the necessary alterations. Made a new Teachers' room with the necessary lavatory accommodation for the Infants' Department.

Lilycroft Boys'. Made a new Teachers' room with the necessary lavatory accommodation attached, and removed some desks from the Mainroom.

Slackside. Improved heating and lighting of cloakroom.

Wibsey. Asphalted the playgrounds at a cost of over £400.

Thackley Open-air. Made provision for sleeping twenty boys, fixing curtains, and lighting two resting sheds, making airing closet, new w.c., wash kitchen, &c., at a cost of over £60 for builder's work.

Greengates. Built a new w.c. attached to the school for the use of female teachers.

Bradford Moor. Remodelled all the scholars conveniences and fixed two new w.c.'s and lavatory basins in the school for the use of female teachers.

Hanson Boys' and Girls'. Converted Lecture Theatre and Balance Room, &c., into a Geography Room and a classroom for Boys' Department, and a covered playshed into a Geography room for Girls' Department.

Horton Bank Top. Remodelled the whole of the conveniences. Improved the lighting of the Mainroom and the desking in the Infants' Department.

Marshfield Junior. Removed w.c. out of the 'Teachers' room and fixed it in the Girls' cloakroom.

Wapping Road Mixed. Remodelled the desks in five classrooms and fixed single seats.

Whetley Lane Girls.' Formed a new 'Teachers' room out of a portion of cloakroom.

Feversham Street. Converted a cloakroom into a 'Teachers' room for Girls' and Infants, and formed a new cloakroom in a corridor.

APPENDIX TABLES.

TABLE I.

NUMBER OF CHILDREN INSPECTED 1ST JANUARY, 1913, TO
31ST DECEMBER, 1913.

(A) GROUPS REQUIRED BY THE CODE OF REGULATIONS OF THE
BOARD OF EDUCATION.

(i.) *Entrants.*

Age	3	4	5	6	7	8	Total
Boys ..	418	774	903	347	68	12	2522
Girls ..	416	652	928	356	71	19	2442
Totals..	834	1426	1831	703	139	31	4964

(ii.) *Leavers.*

Age	12	13	14	Total
Boys	1226	898	—	2124
Girls	1313	852	—	2165
Totals ..	2539	1750	—	4289

(B) GROUPS OTHER THAN CODE.

(i.) *In Elementary Schools.*

Age	9	10	11	Total
Boys ..	7	121	622	750
Girls ..	15	103	575	693
Totals ..	22	224	1197	1443

(ii.) *Special Groups.*

Secondary Schools..	..	..	..	..	500
Scholarship Candidates	..	..	..	..	520
Street Trading	..	..	..	..	151
Defective Cases not due for Inspection				..	348
Children in Special Schools	..	..	..	..	717
Total	..	..	..	..	2236

The total number of children in all the groups inspected in 1913 was 12,932 in addition to numerous re-examinations of children found defective on inspection.

TABLE II.—RETURN SHOWING THE PHYSICAL CONDITION OF CHILDREN INSPECTED.

(i.) *Entrants—Total Inspected, 4964.*

Condition.	AGE AND SEX.												Total.	Per cent.		
	3		4		5		6		7		8				Total.	
	M	F	M	F	M	F	M	F	M	F	M	F			M	F
CLOTHING:																
Unsatisfactory ..	3	7		3		23	14	5	5	—	—	1	39	30	69	1.3
FOOTGEAR:																
Unsatisfactory ..	46	30		68		100	94	37	40	7	8	1	265	231	111	2.2
CLEANLINESS OF HEAD:																
Nits only ..	48	143		60	194	69	333	18	147	5	18	1	201	840	1041	20.9
Pediculi ..	5	8		13		9	38	4	15	1	4	1	28	79	107	2.1
CLEANLINESS OF BODY:																
Dirty ..	16	20		16		42	36	30	13	6	—	1	126	86	212	4.2
Pediculi ..	19	29		29		43	68	24	34	2	1	1	119	162	281	5.7
NUTRITION:																
Below normal ..	169	189		302	308	434	467	173	183	36	30	5	1119	1183	2302	46.5
Bad ..	21	30		30	66	107	94	54	46	8	7	—	220	244	464	9.3
NOSE AND THROAT:																
<i>Tonsils:</i>																
Slightly enlarged ..	50	45		110	197	158	132	65	45	13	14	2	398	437	835	16.8
Much enlarged ..	22	23		41	34	59	54	17	24	5	9	—	144	144	288	5.8
<i>Adenoids:</i>																
Slight ..	40	19		68	54	80	78	26	26	5	8	1	220	185	405	8.1
Marked ..	2	2		13	6	17	5	2	5	3	1	0	37	20	57	1.2
EXTERNAL EYE DISEASE:																
Blepharitis, &c. ..	7	7		9		21	23	6	9	1	1	—	46	40	95	1.9
EAR DISEASE:																
Otorrhoea, &c. ..	3	6		24	24	25	21	21	8	—	3	—	73	62	135	2.7

LEATH :	137	141	271	238	340	320	120	141	24	28	7	9	809	877	1776	35.8
Less than four decayed	73	35	103	162	261	322	134	136	31	33	3	8	725	696	1421	28.6
HEART :																
Congenital	..	3	8	2	5	3	2	3	2	—	—	—	17	11	28	0.6
Acquired	8	21	12	28	24	12	10	2	2	—	—	72	56	128	2.6
LUNGS :																
Tuberculosis	..	1	4	4	7	8	2	2	—	2	—	1	14	18	42	0.8
Tuberculosis suspected	..	2	7	5	18	12	10	4	3	3	1	1	41	30	71	1.4
Bronchitis, &c.	51	79	58	87	89	43	38	7	9	1	1	268	244	512	10.30
NERVOUS SYSTEM :																
Epilepsy	—	1	—	—	—	1	1	—	—	—	—	2	1	3	.06
Chorea	—	1	2	—	—	—	—	—	—	—	—	1	2	3	.06
Other Diseases	8	1	5	5	3	1	2	2	—	1	1	18	20	38	0.7
SKIN :																
Ringworm	1	1	1	3	1	1	—	—	—	—	—	6	3	9	1.8
Other Diseases	13	27	14	28	20	8	11	—	2	—	—	76	55	131	2.6
RICKETS :																
Slight	15	37	19	37	21	11	7	4	2	—	—	104	64	168	3.4
Marked	4	16	13	26	13	4	10	3	1	—	1	53	51	104	2.1
TUBERCULOSIS—NON-																
PULMONARY :																
Glands	5	6	6	11	14	5	5	4	2	2	1	33	30	63	1.3
Bones and Joints	..	—	1	—	1	2	—	1	—	—	—	—	2	4	6	1.2
Abdomen	—	—	1	—	—	—	—	—	—	—	—	—	1	1	.02
DEFORMITIES :																
Deformity present	..	23	78	41	96	58	30	26	13	10	2	2	242	168	410	8.3
SPEECH :																
Stammering	—	4	3	7	6	5	—	1	—	—	—	17	12	29	0.6
MENTAL CONDITION :																
Below Average	1	17	14	35	81	14	14	3	4	1	—	71	122	193	3.9
Dull	—	2	—	—	2	1	—	3	—	—	—	6	4	10	0.2
Mentally Defective	..	—	2	—	—	—	—	—	—	—	—	—	2	—	2	0.04
HEARING :																
Slightly Deaf	4	11	13	8	14	7	5	1	3	—	1	31	39	70	1.4
Markedly Deaf	—	—	—	1	—	—	1	—	1	—	2	1	4	5	0.1

TABLE II. (continued)—RETURN OF DEFECTS.

(ii.) *Leavers and Intermediate Groups. Total Inspected, 5132.*

Condition	Age and Sex.												Total	Per cent.	
	9		10		11		12		13		Total.				
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
CLOTHING:															
Unsatisfactory ..	—	—	—	4	5	8	10	3	9	3	24	18	42	0.7	
FOOTGEAR:															
Unsatisfactory ..	2	1	9	22	67	62	154	151	120	102	352	338	690	12.0	
CLEANLINESS OF HEAD:															
Nits only ..	1	5	5	51	15	261	60	556	58	371	139	1254	1393	24.2	
Pediculi ..	—	—	1	4	4	17	2	44	5	39	12	104	116	2.0	
CLEANLINESS OF BODY:															
Dirty ..	—	1	8	2	21	22	76	72	66	37	171	134	305	5.6	
Pediculi ..	—	1	3	11	31	63	21	28	24	39	79	142	221	3.8	
NUTRITION:															
Below Normal ..	2	6	64	45	336	320	537	513	365	296	1304	1180	2484	43.3	
Bad ..	2	1	10	10	56	64	50	109	32	63	150	247	397	6.9	
NOSE AND THROAT:															
Tonsils:															
Slightly Enlarged ..	2	3	18	13	75	61	189	250	107	138	391	405	856	14.9	
Much Enlarged ..	—	—	5	4	17	25	78	132	65	63	30	19	58	1.0	
Adenoids:															
Slight ..	—	1	—	3	15	18	101	172	61	98	177	292	469	8.1	
Marked ..	—	—	—	1	3	—	2	2	9	4	14	7	21	0.3	
EXTERNAL EYE DISEASE:															
Blepharitis, &c. ..	—	—	—	3	11	13	22	22	17	13	50	51	101	1.7	
EAR DISEASE															
Otorrhoea, &c. ..	—	—	3	1	18	14	47	59	34	33	102	107	209	3.6	
TEETH:															
Less than Four Decayed ..	2	8	39	30	253	253	503	641	411	410	1208	1348	2640	40.2	
Four or more Decayed ..	4	2	11	35	194	168	266	322	180	213	604	740	1434	25.0	
HEART:															
Congenital Disease ..	—	—	1	5	2	5	3	12	5	1	10	18	28	0.4	
Acquired Disease ..	—	—	—	—	43	6	40	48	30	29	100	88	188	3.2	

[illegible]

TABLE II. (continued)—RETURN OF DEFECTS.

(iii.) *Secondary School Children and Scholarship Candidates*

Condition	Secondary School Children					Scholarship Candidates			
	Boys (317)	Girls (183)	Total (500)	Per Cent.		Boys (294)	Girls (226)	Total (520)	Per Cent.
CLOTHING:									
Unsatisfactory ..	—	4	4	0·8		—	—	—	—
FOOTGEAR:									
Unsatisfactory ..	3	6	9	1·8		—	1	1	0·2
CLEANLINESS OF HEAD:									
Nits only ..	—	18	18	3·6		—	51	51	9·8
Pediculi ..	—	—	—	—		—	10	10	1·9
CLEANLINESS OF BODY:									
Dirty ..	—	2	2	0·4		—	—	—	—
NUTRITION:									
Below Normal ..	50	82	132	26·4		53	36	89	17·1
Bad ..	2	5	7	1·4		3	—	3	0·5
NOSE AND THROAT:									
<i>Tonsils:</i>									
Enlarged ..	38	21	59	11·8		18	29	47	9·0
Much Enlarged ..	9	10	28	5·6		—	21	21	4·0
<i>Adenoids:</i> ..	3	9	12	2·4		2	11	13	2·5
EXTERNAL EYE DISEASE									
Blepharitis, &c. ..	—	2	2	0·4		—	6	6	1·1

Otorrhoea, &c.	5	2	7	1.4	4	3	7	1.3
TEETH:								
Less than Four Decayed	105	147	342	68.4	109	119	228	43.9
Four or more Decayed	50	24	83	16.6	86	51	137	26.3
HEART:								
Congenital Disease	1	—	1	0.2	—	1	1	0.2
Acquired Disease	4	1	5	1.0	4	3	7	1.3
LUNGS:								
Tuberculosis	—	—	—	—	1	—	1	0.2
Tuberculosis Suspected	3	5	8	1.6	1	1	2	0.3
Bronchitis, &c.	5	5	10	2.0	2	6	8	1.5
SKIN:								
Ringworm	—	—	—	—	—	—	—	—
Other Diseases	4	7	11	2.2	1	1	2	0.3
RICKETS:								
Slight	10	—	10	2.0	2	—	2	0.3
Marked	1	—	1	0.2	—	—	—	—
TUBERCULOSIS—NON-PULMONARY:								
Glands	2	1	3	0.6	2	—	2	0.3
Bones and Joints	1	—	1	0.2	—	—	—	—
Abdomen	—	1	1	0.2	—	—	—	—
DEFORMITIES:								
Deformity Present	30	37	67	13.4	13	22	35	6.9
SPEECH:								
Stammering	1	—	1	0.2	—	—	—	—
HEARING:								
Slightly Deaf	4	3	7	1.4	—	2	2	0.3

TABLE II. (continued)—RETURN OF DEFECTS.

(iii.) *A. Secondary School Children.—Details of the Condition of Vision.*

Age	$\frac{6}{8}$		$\frac{6}{9}$		$\frac{6}{1\frac{1}{2}}$		$\frac{6}{1\frac{1}{3}}$		$\frac{6}{2\frac{1}{4}}$		$\frac{6}{3\frac{1}{2}}$		$\frac{6}{6\frac{0}{0}}$		Number of Children examined		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total
9 years	—	—	—	—	1	—	—	—	—	—	—	—	—	—	1	—	1
10 years	4	4	2	—	—	—	—	—	—	—	—	—	—	—	6	4	10
11 years	6	1	12	1	3	—	—	—	2	—	—	—	—	—	26	2	28
12 years	38	6	27	1	4	1	1	1	1	—	3	—	2	—	79	9	88
13 years	49	4	18	—	2	1	1	1	—	1	9	—	2	2	82	9	91
14 years	45	14	10	3	4	2	5	3	1	—	2	2	1	—	68	24	92
15 years	21	17	14	1	4	2	1	—	3	—	3	1	1	—	47	21	68
16 years	5	3	2	1	—	—	—	—	—	—	1	1	—	—	8	5	13
Total	168	49	85	7	18	6	15	5	7	1	18	4	6	2	317	74	391

TABLE II. (continued) —RETURN OF DEFECTS.

(iii.) *B. Scholarship Candidates—Details of the Condition of Vision.*

Age	$\frac{6}{6}$		$\frac{5}{5}$		$\frac{6}{4}$		$\frac{6}{3}$		$\frac{6}{2}$		$\frac{6}{1.5}$		$\frac{6}{1.2}$		$\frac{6}{1}$		$\frac{6}{0.75}$		$\frac{6}{0.6}$		Number of Children examined	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Total	
9 years	1	2	—	—	1	—	—	—	—	—	1	—	—	—	—	—	—	—	3	2	5	
10 years	79	59	24	19	16	6	5	8	5	5	3	3	—	—	—	—	—	—	132	102	234	
11 years	81	67	18	23	9	4	8	5	14	1	3	3	2	3	2	3	3	2	135	106	241	
12 years	15	6	4	3	2	1	—	1	—	—	—	1	—	—	—	—	—	—	21	12	33	
13 years	3	2	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	3	4	7	
Total	179	136	46	46	28	11	13	14	19	6	7	8	2	5	294	226					520	

TABLE III.
AVERAGE HEIGHTS AND WEIGHTS.
(i.) *Entrants.*

Age	Number Examined, 4964	Average Height				Average Height (England)				Average Weight				Average Weight (England)			
		Boys		Girls		Boys		Girls		Boys*		Girls		Boys		Girls	
	Boys 2522	Girls 2442	c.m.	ins.	c.m.	ins.	c.m.	ins.	c.m.	kilos.	lbs.	kilos.	lbs.	kilos.	lbs.	kilos.	lbs.
3	418	416	93·6	36·8	91·1	35·8	92·4	36·4	91·6	14·8	31·2	13·9	30·5	14·8	32·7	14·4	31·8
4	774	652	97·7	38·4	102·1	40·1	98·2	38·7	98·0	16·3	35·8	15·5	34·1	16·3	35·9	15·8	34·8
5	903	928	102·7	40·4	103·4	40·7	103·1	40·6	102·6	17·2	37·8	16·9	37·1	17·5	38·6	17·0	37·6
6	347	356	106·3	41·8	105·4	41·4	107·9	42·5	107·6	19·2	42·2	16·7	36·7	19·6	42·6	18·5	40·9
7	68	71	113·5	44·6	112·8	44·4	114·8	45·2	113·7	20·2	45·4	17·6	38·7	21·2	46·7	20·5	45·2
8	12	19	117·9	46·4	118·5	46·6	119·3	47·0	117·6	21·4	47·0	22·4	49·2	22·9	50·4	22·2	48·9

* The boys were weighed without coats, waistcoats, and boots, accordingly, to make these figures comparable with the average weights (England) as given in Table, 5 kilos. (11 lbs.) should be added. This represents the average weight of the clothing removed from boys aged five years, hence a slightly smaller addition should be made in the case of boys below this age, and a slightly greater in that of boys older.

The figures for "England" have been taken from a table prepared by Dr. A. W. Tuxford (Lines.) and Dr. R. Ashleigh Glegg (Lines.), and issued in the Board of Education Medical Report for 1912.

TABLE III. (continued)—HEIGHTS AND WEIGHTS.

(iii) Secondary School Children.

Age	Number Examined ⁵⁰⁰		Average Height (England)				Average Weight				Average Weight (England)			
	Boys 317	Girls 183	Boys		Girls		Boys		Girls		Boys*		Girls	
			c.m.	ins.	c.m.	ins.	c.m.	ins.	c.m.	ins.	kilos.	lbs.	kilos.	lbs.
9	1	—	132.0	51.9	—	—	124.7	49.1	—	—	28.1	61.8	—	—
10	6	13	139.3	54.8	136.9	53.8	129.5	51.0	129.7	51.1	33.9	74.5	33.1	72.8
11	26	26	136.0	53.9	141.7	55.7	134.1	52.8	133.6	52.6	28.8	63.3	37.1	81.6
12	79	55	142.3	56.0	144.4	56.8	139.7	55.0	138.6	54.6	33.7	74.1	36.1	79.4
13	82	32	146.4	57.6	152.9	60.1	142.4	56.1	144.5	56.9	36.3	79.8	41.2	82.4
14	68	27	153.1	60.2	155.5	61.2	147.0	57.9	149.0	58.7	42.1	92.6	45.0	99.0
15	47	23	158.8	62.5	157.2	61.8	Not	available	—	—	46.5	102.3	46.3	101.8
16	8	7	164.7	64.5	156.5	61.6	Not	available	—	—	49.3	108.4	50.8	111.7
													Not	available
													Not	available

* The boys were weighed without coats, waistcoats, and boots, accordingly, to make these figures comparable with the average weights (England) as given in the Table, 11 kilos. (24 lbs.) should be added.

The figures for "England" have been taken from a table prepared by Dr. A. W. Tuxford (Lines.), and Dr. R. Ashleigh Glegg (Lines.), and issued in the Board of Education Medical Report for 1912.

TABLE III. (continued)—HEIGHTS AND WEIGHTS.
(iv.) *Scholarship Candidates.*

Age	Number Examined, 520	Average Height				Average Height (England)				Average Weight				Average Weight (England)			
		Boys		Girls		Boys		Girls		Boys*		Girls		Boys		Girls	
		c.m.	ins.	c.m.	ins.	c.m.	ins.	c.m.	ins.	kilos.	lbs.	kilos.	lbs.	kilos.	lbs.	kilos.	lbs.
9	3	132.4	52.1	131.7	51.8	124.7	49.1	122.6	48.7	28.1	61.8	27.0	59.4	25.1	55.3	24.7	54.5
10	132	134.7	53.0	133.6	52.6	129.5	51.0	129.7	51.1	28.9	63.6	27.6	60.7	27.8	60.4	26.7	58.8
11	135	135.3	53.2	139.3	54.8	134.1	52.8	133.6	52.6	29.7	65.3	29.9	65.8	29.9	65.9	29.6	65.2
12	21	141.3	55.6	141.5	55.7	139.7	55.0	138.6	54.6	32.9	72.4	32.9	72.4	33.0	72.8	33.5	73.8
13	3	147.9	58.2	150.1	59.2	142.4	56.1	144.5	56.9	37.5	82.5	39.0	85.8	35.1	77.4	36.3	80.0

* The boys were weighed without coats, waistcoats, and boots. Accordingly to make these figures comparable with the average weights (England) as given in the Table, 1.1 kilos. (2.4 lbs.) should be added.

The figures for "England" have been taken from a table prepared by Dr. A. W. Tuxford (Lines,) and Dr. R. Ashleigh (Ilegg (Lines,)) and issued in the Board of Education Medical Report for 1912.

TABLE IV.—PREVIOUS MEDICAL HISTORY.
(i). *Entrants.*

Age	Three Years			Four Years			Five Years			Six Years			Seven Years			Eight years		
	Boys	Girls	No.	Boys	Girls	No.	Boys	Girls	No.	Boys	Girls	No.	Boys	Girls	No.	Boys	Girls	No.
Boys ex'd 2522	418	416		774	652		993	928		347	356		68	71		12	19	
Girls ex'd 2442																		
Total 4964																		
Disease	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Measles ..	125	29.9	141	33.8	297	38.3	283	43.4	379	41.9	474	51.0	198	57.0	189	53.0	33	48.5
Whooping Cough ..	81	19.3	89	21.3	169	21.8	204	31.2	259	28.6	291	31.3	104	29.9	123	34.5	20	29.4
Scarlet Fever	6	1.4	7	1.6	18	2.3	17	2.6	31	3.3	33	3.5	23	6.6	19	5.3	2	2.9
Diphtheria ..	2	0.4	6	1.4	12	1.5	5	0.7	26	2.8	20	2.1	8	2.3	10	2.8	2	2.9
Mumps ..	21	5.0	24	5.7	48	6.2	52	7.9	93	10.2	73	7.8	42	12.1	41	11.5	10	14.7
Chicken Pox	66	15.7	79	18.9	124	16.0	146	22.3	181	20.0	186	20.0	58	16.7	90	25.2	17	25.0
Vaccinia ..	38	9.0	37	8.8	76	9.8	91	13.9	84	9.3	63	6.7	38	10.9	37	10.3	10	14.7
Typhoid Fever	—	—	—	—	2	0.2	—	—	—	—	—	—	1	0.2	1	0.2	—	—
Pneumonia ..	8	1.9	8	1.9	23	2.9	24	3.6	41	4.5	42	4.5	13	3.7	16	4.4	3	4.4
Bronchitis ..	17	4.1	19	4.5	26	3.3	23	3.5	47	5.2	53	5.7	13	3.7	19	5.3	3	4.4
Rheumatism	—	—	1	0.2	—	—	—	—	7	0.7	—	—	1	0.2	2	0.5	—	—
Tuberculosis..	—	—	—	—	1	0.1	2	0.3	1	0.1	1	0.1	1	0.2	1	0.2	—	—

TABLE V.
PARENTS PRESENT AT MEDICAL INSPECTION.

(i.) *Entrants.*

Age	Boys			Girls		
	Number of Children Examined	Number of Parents present	Percentage of Parents present	Number of Children Examined	Number of Parents present	Percentage of parents present
3 years ..	418	265	63.4	416	289	69.4
4 years ..	774	478	61.7	652	431	66.1
5 years ..	903	543	60.1	928	575	61.9
6 years ..	347	188	54.1	356	209	58.7
7 years ..	68	37	54.4	71	48	67.6
8 years ..	12	7	58.3	19	12	63.1
Total ..	2522	1518	60.1	2442	1564	64.0

(ii.) *Leavers and Intermediate Group.*

9 years . . .	7	4	54.2	15	9	60.0
10 years ..	121	37	30.5	103	47	45.6
11 years ..	622	199	31.9	575	295	51.3
12 years ..	1226	353	20.6	1313	636	48.4
13 years ..	898	218	24.2	852	417	48.9
Total ..	2874	811	28.2	2858	1404	49.1

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